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ABSTRACT

This yearbook provides educators with current research and practical guidelines for improving the education of teacher candidates and beginning teachers. The book has four sections, each on a particular topic and containing an overview and a response (reflections and implications). The first section focuses on contexts for effective field experiences and has four chapters: (1) "Relationships among School Context and Student Teachers' Attitudes and Performance" (Edith M. Guyton and Martin Wesche); (2) "Trusting Relations, Preservice Teachers, and Multicultural Schools" (Linda Valli); (3) "Community Field Experiences and Teacher Preparation for Diversity: A Case Study" (Kenneth M. Zeichner and Susan L. Melnick); and (4) "Designing Professional Development Learning Communities" (Patrick M. Jenlink: And Others). The overview and response are by Paul C. Paese. The second section, focusing on processes for successful field experiences, contains three chapters: (5) "Laboratory Experiences as Transition from Campus to Field" (Kim K. Metcalf and Pamela A. Kahlich); (6) "Making Sense of Teaching and Learning: A Case Study of Mentor and Beginning Teacher Problem Solving" (Judith A. Ponticell and Sally J. Zepeda); and (7) "Roles and Responsibilities of the Student Teacher Supervisor: Matches and Mismatches in Perception" (Billie J. Enz, Donald J. Freeman, and Mark B. Wallin). The overview and response are by Gary P. DeBolt. The third section, which discusses connecting field experiences through communication, contains three chapters: (8) "Providing Effective Cooperating Teacher Feedback" (Elizabeth A. Wilkins-Canter); (9) "Communicating Personal Constructs about Diverse Cultures: A Cross-Case Analysis of International Student Teaching" (Elaine Jarchow, J. McKay, R. Powell, and L. Quinn); and (10) "Facilitating Schools-University Communication: A Constructivist Approach to Practitioner Empowerment (Mary J. Selke). The overview and response are by Dan O'Hair and Mary John O'Hair. The fourth section focuses on field experiences and curriculum and contains two chapters: (11) "Learning about Mathematics in Elementary Methods Courses" (Robert E. Floden, G. W. McDiarmid, and N. Jennings) and (12) "Educational Environments for the Teaching and Learning of Elementary Science: Questions of Fit" (Sharon Nichols, Deborah J. Tippins, and Denise Crockett). The overview and response are by Renee Tipton Clift and Laurie Thomas. (CK)

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PREPARING TOMORROW'S TEACHERS:
THE FIELD EXPERIENCE

Teacher Education Yearbook IV

EDITORS
D. JOHN MCINTYRE
DAVID M. BYRD

Association of Teacher Educators

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PREPARING TOMORROW'S TEACHERS:

THE FIELD EXPERIENCE

Teacher Education Yearbook

Volume 4 *Founded 1991*

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Teacher Education Yearbook IV

EDITORS

D. JOHN MCINTYRE
DAVID M. BYRD

Association of Teacher Educators

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Foreword

Rose Duhon-Sells

Rose Duhon-Sells is a faculty member at McNeese State University in Lake Charles, Louisiana and 1995-1996 President of the Association of Teacher Educators.

The teaching profession has portrayed a certain ambiance in the minds and hearts of the average American. Everyone remembers that special teacher who made a difference in his or her life. This has created a fantasized image of teaching and the characteristics associated with the teaching profession. It has envisioned that the essential qualities are to be kind, loving, and understanding and to have a listening ear. These are assets of great teachers. However, this superficial perception has caused many young people to go into the teaching profession without fully realizing the extent of the intellectual body of knowledge and appropriate teaching skills necessary to become an effective teacher.

Prior to the late sixties, students were inundated with the theoretical base for teaching and learning. Typically, during the first 2 to 3 years of their college studies, little or no attention was given to practical application. Unfortunately, much of the information included in their knowledge base did not mirror the realities of the classroom. Student teaching was often the first opportunity to really interact with the K-12 community.

In the early seventies, policymakers in teacher education programs began to emphasize the need for early field experiences. Numerous states began requiring that field experiences be included as early as the first course of teacher education programs. This early entry into the classroom has a twofold purpose. First, it allows students to assess their ability, stamina and endurance in relating to children, their families, and school personnel. Second, it gives students the option early in their college studies to make the decision to remain in teacher education. Having students actually work and interact with children in the school has contributed greatly to the teaching and learning process. Furthermore, the school life of young children does not have to suffer while new teachers are exploring, as they try to determine if they have the ability or desire to continue in the teaching profession.

The Association of Teacher Educators (ATE) has historically taken the lead in sharing ideas and research focused on effective field experiences. The organization was established initially as the Association of Student Teaching. The National Field Directors Forum, composed of educational scholars from throughout the country to address issues pertinent to improving the quality of field experiences and other professional laboratory experiences, is still a vital component of the organization.

In 1986, ATE developed the guidelines for field experience components of teacher education programs. The National Council for the Accreditation of Teacher Education (NCATE) used these guidelines for developing their standards for field experiences. These standards demand that college/university teacher education programs infuse field experiences throughout the teacher education curriculum.

Currently, ATE is playing a major role, through the Commission on Professional Development Schools, in collaborative efforts between colleges of education and local education agencies helping teacher education faculty members establish professional development schools. This is a long overdue marriage of the two institutions because it makes certain that the theoretical base of the college level will address the practical application needed to work with children.

In addition, field experiences have been very beneficial in developing consciousness regarding cultural diversity. Throughout 12 years of schooling, many teacher education majors attended classrooms that were homogeneous, as related to race and culture. When they begin their field experiences, it is their first opportunity to interact with students, teachers, and school personnel of a different hue. Effective field experiences add a new dimension for learning about other people and about themselves. This gives the education major an early glance at the "real world," which includes children from different cultural backgrounds, having different patterns of behavior and learning styles. It helps them to develop an appreciation and respect for the diverse nature of this society.

As we move into the year 2000, it is a most exciting time for educators, teacher education majors, colleges of education, and local school districts. The key decision makers in the educational arena are working in harmony, communicating, sharing ideas, planning, and assessing to ensure quality teacher education programs to cultivate the best possible classroom teachers. Of utmost importance in this milieu is the accomplishment of expanding and improving field experiences, as educators working together to build bridges.

Introduction:
Using Research to Strengthen Field Experiences

David M. Byrd

D. John McIntyre

David M. Byrd is Associate Professor and Director of the Office of Teacher Education at the University of Rhode Island. He has a long-term professional and research interest in the preparation of teachers, preservice through inservice. He is a graduate of the doctoral program in teacher education at Syracuse University. He has written or cowritten more than 20 articles in professional journals and is coauthor of the recent textbook *Methods for Effective Teaching* (Allyn & Bacon).

D. John McIntyre is Professor and Director of Professional Education Experiences at Southern Illinois University at Carbondale. He is past president of the Association of Teacher Educators and has received ATE's award for Distinguished Research in Teacher Education. He has published nearly 75 articles in the area of teacher education and recently was coauthor, with Mary O'Hair, of *The Reflective Roles of the Classroom Teacher* (Wadsworth). He is a graduate of Otterbein College, Ohio State University, and Syracuse University.

Why conduct theory development and research on student teaching and field experiences? Teachers report that student teaching was the most valuable aspect of their teacher education program. Therefore, one might assume that research to improve the "most valuable" aspect of teacher preparation programs is unnecessary and that the movement to field-based teacher education has all the information it needs to succeed. Many authors, however, have asserted that the movement to field-based teacher education does not provide a panacea or cure-all for all the criticisms that trouble teacher preparation.

Much of the criticism launched at teacher preparation programs comes under two headings. First, campus-based teacher education has been criticized for its lack of a theoretical base, irrelevance to schools and children, superficial nature, and lack of unity and integration of campus and field (Fullan, 1991; Goodlad, 1990, 1994; Sarason, 1993). The second major area of criticism lies in the belief that field experiences merely socialize the novice teacher in the existing school environment (Feiman-Nemser & Buchmann, 1986; Fullan, 1985; Hoy & Rees, 1977; Liston & Zeichner, 1988; Popkewitz, 1985; Zeichner, 1986; Zeichner & Gore, 1990). The perception underlying this criticism is that care is not taken in the placement of teacher education students into healthy innovative school settings with excellent cooperating teachers. Some would go even further and question whether field experiences in schools, as they exist at this time, will ever be adequate for the development of teachers who are reflective, who challenge the status quo, and who are confident in the decisions they make. A perception exists that not much has changed since George Counts dared schools to build a new social order. In short, schools are still perceived as conservative organizations not known for innovation, commitment to professional staff development, or the nurturing of novice teachers. A dominant theme from the literature is that field experiences not well designed or linked to campus-based curriculum in meaningful ways are unlikely to lead the majority of those who participate in them toward excellence.

After this rather bleak assessment of teacher education in general and field experiences specifically, you may wonder what teacher education students see in student teaching that leads them to perceive it as the best part of their education. Henry (1989) asserted that certain factors contribute to the ongoing popularity and centrality of student teaching to teacher education programs. During student teaching, teacher candidates do—they teach. This embodies the classic motivating force of learning through doing. Working with students in schools also provides a high degree of emotional involvement, of a mostly positive nature. In addition, teacher candidates feel themselves grow through experience. The opportunity to set their own goals rather than having goals set for them is motivating to student teachers. Through student teaching, teacher candidates begin to link to a culture of teaching. During student teaching, even with all its problems, students feel engaged, challenged, and even empowered. Perhaps it is not so surprising that student teachers find student teaching superior to their previous educational experiences. (For a more complete review of the research on field and laboratory experiences, see McIntyre, Byrd, & Foxx, in press.) Conceivably, research on field experiences should focus on gaining a better understanding of both the strengths and the weaknesses of learning via experience (e.g., field experiences, student teaching, mentoring, field-based staff development) so teacher educators can maximize the benefits of these powerful educational experiences.

The purpose of this yearbook is to provide educators with current research and practical guidelines for improving the education of teacher candidates and beginning teachers. The core of this book is the rich descriptions of research on field experiences provided by educators knowledgeable about areas in need of greater understanding if we are to improve the education of teachers. A strength of this book is the use of respondents to introduce and set the stage for the reports of research. The challenge for respondents is not simply to critique the research papers but to provide an overview and framework for the reader and then to synthesize, interpret, and apply results in a context useful to both college and school-based teacher educators. It is our belief that some of the most valuable work in this series has been done by the various respondents.

The research questions investigated by our authors are of primary importance to teacher educators. These questions include the following: Does the placement site make a difference in the success of student teachers? Does allowing teacher education students to choose if they will or will not work in lower SES schools enhance their chances for success in working in those schools? Do teacher education students with attitudes consistent with the goals of the teacher education program perform at a higher level? Does it matter whether a cooperating teacher shares the goals of a teacher education program? Does involvement in a community field experience or international student teaching help prospective teachers become more culturally sensitive? Do campus-based laboratory experiences lead to increases in preservice and inservice teachers' knowledge and performance? Should first-year mentorship programs be based on a model that helps first-year teachers become decision makers and problem solvers, rather than a model in which mentors provide help in solving specific "nuts-and-bolts" problems? Is it true that teacher education students do not have the knowledge necessary to teach elementary mathematics?

Of course, the devil is in the details—or, perhaps it would be more appropriate to say, everything is context. For example, the following research questions show the importance of context and the complexity of the issues dealt with by yearbook authors. Is it a good idea for student teachers placed in urban schools to share revelations from their own lives with students? Any student teacher who reaches out to students and breaks the admonition of all curmudgeons not to smile until Thanksgiving is taking a risk. Yet attempts to develop personal relationships by showing an interest in students' lives, which may include sharing revelations about their own lives, may enhance a student teacher's ability to relate to students. This type of interpersonal interaction, however, is not something student teachers are fully prepared to engage in at the start of student teaching but is a skill that they need to spend time and effort developing during student teaching. Therefore, the implication for teacher educators is that if they perceive it to be important for teachers to be able to relate to students, especially students whose cultural backgrounds differ from that of the teacher, they must nurture and support interpersonal exchange processes during student teaching.

Another issue examined by research included in this book has implications for teacher educators and teacher education policymakers. The problem takes on greater importance in light of reforms taking place in elementary school mathematics that require beginning teachers to possess a knowledge of mathematical concepts that few currently hold. In fact, few mathematics majors are able to explain why simple mathematical rules work (e.g., why you invert and multiply when dividing fractions). Therefore, whose responsibility should it be to ensure teacher education students' mathematical knowledge? Information central to teaching elementary mathematics is not taught in college mathematics courses or routinely in methods courses. Should it be taught? If so, by whom? Or is it the responsibility of schools to provide this knowledge during the first few years of teaching either through staff development or through the growing phenomenon of teacher collegial networks? Our point is that research raises answers as well as questions and that the implementation of important research findings in educational programs is both obligatory and difficult.

The authors have provided substantial information that should not only inform but also ease the movement toward implementation. In any case, we think you will find both absorbing and informative the particulars of how these research projects answered important questions as well as the recommendations for practice.

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DIVISION I

Contexts for Effective Field Experiences

CONTEXTS: OVERVIEW AND FRAMEWORK

Paul C. Paese

Paul C. Paese is Assistant Dean and Director of Teacher Education and Field Experiences at Southwest Texas University in San Marcos. He is also Professor in the Department of Health, Physical Education and Recreation. He has been involved in field experiences/student teaching for the past 17 years and directs abroad student teaching programs in England, Mexico, and New Zealand. He has published more than 40 articles/chapters in the area of teacher education/supervision and field experiences as well as making numerous presentations at the international, national, and state levels. He is currently president of the ATE State Unit in Texas and serves on three other state boards in Texas.

During the past two decades, the majority of research in teacher education has focused on the field experience component, specifically early field experiences and student teaching. Questions that have been raised over the years have dealt mainly with the structure and effectiveness of these experiences as student interns progress through student teaching and into their first year of teaching. Although there is still some debate on the aforementioned questions, it is now important to focus on where these experiences should be taking place and the individuals directly responsible for the quality of those experiences.

It is not within the scope of this overview to address in any detail all of the issues raised concerning field experiences; instead, I will set the stage for the four chapters that follow. Upon conclusion of the chapters, I will not only react to them but provide further thoughts and questions on this topic.

What Do We Know About Field Experiences?

Within the preservice phase of teacher education, the two major components are early field experiences (pre-student teaching) and student teaching or internship. The early field experiences that precede student teaching include two major purposes: to explore teaching as a career option and to practice the necessary teaching skills needed for carrying out that professional role. We know that these types of experiences vary in length and can be held in a variety of locations, both on and off campus. Student teaching or interning is the capstone experience during the preservice phase when the intern is placed in a school site for a prolonged period of time (i.e., 10-15 weeks).

These types of experiences during preservice preparation are abstract, vicarious, or concrete. Abstract experiences usually take place on campus, where the interns read and discuss issues relating to the act of teaching. Vicarious experiences usually are provided to interns in the form of viewing videotapes of actual teachers teaching or in a lab where interns, through the use of fiber-optic cable, can view live instruction in a school and actually interact with the teacher. The concrete experience is divided into two segments, indirect and direct. The indirect concrete experiences are held at a school site and the intern is given the opportunity to observe in an actual live classroom. The direct concrete experience gives the intern the opportunity to be actively involved in the instructional process. The most concrete of all experiences we have in teacher education is, of course, the student teaching internship.

Over the years, we have been guided by myths concerning field experiences as to variety of placements, time to begin these experiences, sequence, progression, and so on. What we do know from past research is that one field experience, no matter what the length, has some positive effect on the students (Folkert, 1978; Paese, 1985). There is no relationship between the number of hours spent in field experience and performance in student teaching (Calfee, 1983). Finally, structured experiences can also have a significant impact upon student interns in the development of teaching skills (Paese, 1984, 1985).

Field experiences (pre-student teaching and student teaching) will remain an integral component of teacher education. Productive and structured experiences usually mean less stress, higher teacher efficacy, and more effective teaching. As a result of the reform movement in teacher education during the 1980s, the structure of field experiences has been affected by the professional development school movement. During the late 1980s and into the 1990s, most teacher education programs have taken professional development courses to the public schools, thus forming a greater partnership with practicing teachers in the delivery of the programs. The major result is that teacher education programs are reality based and provide interns many more contract hours in public schools. The effect of this model on the effectiveness and retention of teachers is still in its infancy (Stallings & Kowalski, 1990). Teacher education, by becoming more field based, will produce teachers who are able to teach more effectively and confidently in a wide variety of situations and to an increasingly diverse population of students. Interns placed in the schools will assist teachers in educating children, which helps to alleviate the problem of cross-purposes (Feiman-Nemser & Buchmann, 1983).

As we all can see, how we prepare and structure experiences for interns is still somewhat an issue, but one that has decreased during the past few years. It is now critical that we examine the context: the schools, classrooms, teachers, and communities where interns are placed during field experiences. Zeichner (1986) has argued that teacher education has not paid enough attention to the relationship of context and teacher development. The ecology of the school (physical environment, pupils, community, and so on) has a major influence on a student intern's acquisition of skills (Copeland, 1977). These issues are not new to us, but we must ask ourselves one very important question: Do the experiences we provide our interns prepare them to teach all the children of the United States?

Considerations for Change

As a result of the demographic shifts of the 1980s, today's teachers are far more likely than their predecessors to teach children with backgrounds different than their own. Minority enrollments range from 70% to 96% in the nation's 15 largest school systems (Olsen, 1988). Asian, Caribbean, and Hispanic children are arriving at the schoolhouse door with a variety of linguistic and cultural heritages (Kellogg, 1988). The U.S. Department of Education estimates that 20% (12.6 million) of U.S. children live in families with incomes under the official poverty rate (Reed & Sautter, 1990). By the year 2000, almost 40% of all school-age children will be minorities, as is the case now in most urban school systems (Ogle, 1990). Let us also examine some of the startling changes in the conditions of children:

- One in four children come from poverty and one in three live with a single parent (i.e., 15.5 million children; National Commission on Children, 1991).
- Homicide is the fourth leading cause of death in children ages 1 to 9, third for ages 10 to 14, and second for ages 15 to 19 (Maternal and Child Health Bureau, 1993).
- Half of today's marriages end in divorce; 23% of children today are born outside of marriage (Lawson, 1994).
- Almost 60% of mothers with preschool-age children work, and 74% of mothers with school-age children work (National Commission on Children, 1991).
- Single-parent families represent 34% of the homeless; 65,000 to 100,000 children in the United States are homeless (Bassuk, 1991).
- One fifth of children under 18 suffer from some form of mental disorder (National Institute of Mental Health, 1993).
- Teenage suicide is increasing at an alarming rate and now ranks third in causes of adolescent deaths (Lawson, 1994).
- One of three 6-year-olds is not prepared for a formal education, and 30% of children who enter the ninth grade do not graduate (Lawson, 1994).

The increasing cultural diversity of U.S. schools and the problems and changes taking place in our nation illustrate the need for teachers who are well prepared not only generally but also to meet these specific challenges. Today our teaching force is approximately 93% white, 5% black, and 2% Hispanic. Although the social and cultural composition of public school classrooms is changing dramatically and will continue to do so, the disparity between teachers and pupils is unlikely to change, at least in the near future.

Haberman (1987) asks a very intriguing question: Will traditional teacher education programs be able to meet the needs of America's children in the preparation of teachers in any serious way, or will they continue to add a course or two as a requirement so as to maintain existing programs? Students receiving certification from these institutions are ill-prepared to teach children with backgrounds different than their own and have little knowledge about different ethnic groups (Zimpher & Ashburn, 1992). They also want to teach students like themselves and are uncomfortable with parents of ethnic minorities (Larke, 1990). Goodlad (1990) has stated also that the majority of teacher education students have a low perception of efficacy and feel that many students in schools are not capable of learning.

Over the past 20 years, teacher education has made significant strides in preparing interns for the profession by increasing school-based experiences, as well as structures in these experiences, and integrating research/educational theories into public school sites. I hope that within the next decade the same strides will be made in terms of the settings where our future teachers receive their training and field experiences.

Four Chapters

The following four chapters provide examples, research findings, and suggestions on how teacher education programs can better prepare interns during field-based components. In Chapter 1, Guyton and Wesche explore the relationship among perceived affective context and SES of students in both practicum and student teaching placements as well as its effect on educational attitudes and teaching performance. Results illustrated that low SES and low context ratings were related to lower practicum performance. Using constructivism, Valli, in Chapter 2, explores the perceptions of student teachers in cross-cultural settings, the majority of whom reported having successful and positive experiences. Valli also offers a number of suggestions that will make this process more effective. Zeichner and Melnick, in Chapter 3, present an example—a program that provides interns with the goal of developing greater cultural sensitivity and intercultural teaching competence. Finally, in Chapter 4, Jenlink, Kinnucan-Welsch, and Odell make a case that professional development has been fragmented over the years. The authors provide us with a framework for the process of forming professional development communities that will benefit not only the teaching profession but also the future learning of all children.

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1 Relationships Among School Context and Student Teachers' Attitudes and Performance

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ABSTRACT

This chapter explores relationships among (a) perceived affective context and socioeconomic status of students in a school (or school SES) of practicum and student teaching placements, (b) educational attitudes, and (c) teaching performance. Subjects were initial teacher preparation students at an urban university. Regression analysis showed that low SES and low context ratings were related to practicum performance; the

> lower the school SES or context, the lower rated the performance. Also, students with more traditional and directive teaching attitudes were rated lower in practicum teaching performance and student teaching performance. Low school SES was related to higher rated student teaching performance.

A generally accepted and understood goal for teacher education is the development of teachers capable of working with diverse student populations. The primary method for achieving the goal is placing students in field experiences in schools with diverse populations. Diversity sometimes is defined broadly, but its most typical application is in terms of racial/ethnic/economic differences. Regardless of student diversity, the context of field experiences also has been posited to have a strong influence on teacher socialization (Guyton & McIntyre, 1990; Zeichner & Gore, 1990). This chapter presents findings from a study of relationships among economic diversity and context of student teaching, and educational attitudes and performance.

Review of the Literature

School Context

Consideration of the school context must be set within a teacher socialization framework. One socialization paradigm identified by Zeichner and Gore (1990) is the interpretive paradigm in which socialization is the product of interaction between the school and the individual. The key term is "interaction"; school context may inhibit or encourage certain actions or attitudes, but the teacher's personal characteristics interact with those factors to produce the school context effect. Blase (1986) referred to this phenomenon as a redefinition of self within the institutional context.

Hoy and Feldman (1987) averred that school context had two constructs: (a) affective context, which is the ambience of the school created by such things as teacher morale, and (b) objective context, which is the socioeconomic status of the school. Zeichner (1984) found that the following factors influenced the development of teachers' perspectives: teacher-pupil ratio, material resources, authority relations, school values and ideals, and collegial influence. Driscoll and Kuhlman (1989) posited dual influences in teacher socialization: (a) personal, which includes teacher education program and teacher attitudes, and (b) organizational, which includes other teachers and school environment. They also found that first-year teachers who went through a school-based alternative program were proactive and interactive in their socialization and not unduly influenced by negative factors. Hoy and Woolfolk (1990) had student teachers rate school context based on support from college supervisors, other student teachers, cooperating teacher, and other teachers in the school. They found no interaction between context and efficacy or custodial attitude but did find a decrease in teaching efficacy and an increase in custodial attitudes. McNeely and Mertz (1990) obtained similar findings.

Kagan (1992) reviewed current research on the role of context in teacher socialization. She reported four contextual factors affecting growth and success: the teaching assignment (the nature of the content and pupils to be taught), colleagues' willingness to provide support, parental relationships, and degree of autonomy and leadership afforded teachers.

Teacher Attitudes

Shaw and Wright (1967) defined the term *attitude* as "a relatively enduring system of evaluative, affective reactions based upon and reflecting the evaluative concepts or beliefs which have been learned about the characteristics of a social object or class of social objects" (p. 3). Harvey, Prather, White, Alter, and Hoffmeister (1966) and Rose and Medway (1981) found that teachers with different attitudes vary in their teaching behaviors. Bunting's (1985) research used the labels "student-centered" and "directive" to classify teachers' educational attitudes. She found that teachers who were more student centered used instructional techniques that encourage active and direct student involvement in learning and allow students to predict, infer, generalize, and evaluate as well as make decisions about their educational instruction. The directive label corresponds to more teacher-centered behavior, suggesting a custodial approach to classroom management and a reliance on conservative instructional techniques. Pajares (1992) provided empirical and theoretical support for the influence of beliefs (such as efficacy and educational attitude) on teacher behavior.

Although most teacher education programs stress the desirability of democratic, humanistic, progressive approaches to education, considerable evidence (Lanier & Little, 1986; Zeichner & Tabachnick, 1981) indicates that many of the effects of teacher education on attitudes and beliefs are temporary. As beginning teachers become socialized into the profession, they often leave behind the innovative practices and progressive attitudes developed during their preservice experiences (Cooney, 1985; Etheridge, 1987), although some studies (Jordell, 1987; Lawson, 1992; McDaniel, 1991; Pigge & Marso, 1987; Weinstein, 1988) have reported that teachers' attitudes are relatively stable in the first year.

Teacher's Sense of Efficacy

Teacher's sense of efficacy is a multidimensional construct consisting of at least two dimensions that correspond to Bandura's (1977) two-component model of self-efficacy (Ashton & Webb, 1986; Gibson & Dembo, 1984; Tracz & Gibson, 1986). In applying Bandura's model to teachers and teacher efficacy, Gibson and Dembo (1984) referred to Bandura's outcome expectancy as the degree to which teachers believe that students can be taught given such factors as family background, academic ability, and school conditions (teaching efficacy). They characterized personal teaching efficacy as the teachers' evaluation of their own ability to bring about positive student change and motivation, corresponding to Bandura's second construct of efficacy.

Research by Ashton and Webb (1986) found that teachers' beliefs in students' educability were negatively related to teachers' use of strong control tactics and positively related to supportive, interactive styles permitting open communication and involvement of students in decision making. Teachers' beliefs in their personal teaching efficacy were positively related to teachers' maintenance of a secure, accepting classroom climate, support of student initiative, and concern with meeting the needs of all students.

Teacher efficacy and student achievement were found to be significantly related in numerous research studies (Armor et al., 1976; Ashton & Webb, 1986; Berman, McLaughlin, Bass, Pauley, & Zellman, 1977; Gibson & Dembo, 1984; Tracz & Gibson, 1986). Teacher efficacy also has been related to better teaching practices with low-achieving students (Ashton & Webb, 1986; Gibson & Dembo, 1984).

Method

Subjects

The subjects of this study were graduated students who entered traditional teacher preparation (TTP) early childhood programs at an urban university in September 1990 (*n* = 66) and September 1991 (*n* = 44) and students who entered alternative teacher preparation (ATP) programs in early childhood education in June 1991 (*n* = 39), June 1992 (*n* = 19), and June 1993 (*n* = 35).

Traditional program graduates were 61 white females (92%), 3 African American females (5%), 1 Asian female (1%), 1 Native American female (1%), and no males. Alternative program graduates were 62 white females (76%), 9 African American females (1%), 1 Asian female (1%), 1 other female (1%), 7 white males (8.5%), and 2 African American males (2%). In the combined groups (used in this study), 83.1% of the graduates were Euro-American females, and 16.9% of the graduates were males and/or minorities.

Measurements

Educational Attitudes Inventory. The Educational Attitudes Inventory (EAI) (Bunting, 1985) is made up of two factor-analytically derived scales describing student-centered/progressive and teacher-centered/directive teaching views. Item responses on the EAI are in the form of a Likert-type scale with a 5-point continuum of options. The progressive scale has a maximum score of 95 points; the directive scale has a maximum score of 75 points. Split-half reliability measures for the two scales are .89 for the progressive scale and .73 for the directive scale.

Teacher Efficacy Scale. The Teacher Efficacy Scale (Gibson & Dembo, 1984) measures two aspects of efficacy. *Personal teaching efficacy* is defined as a self-evaluation of one's ability to bring about positive student change. *Teaching efficacy* is defined as the belief that students are capable of learning regardless of home environment, motivation, and other factors. The scale was tested for internal consistency and yielded a Cronbach's alpha coefficient of .78 for personal teaching efficacy and .75 for teaching efficacy for 16 of 30 items. Because acceptable reliability coefficients resulted from only 16 of the original 30 items (Gibson & Dembo, 1984), only those 16 items were used. The maximum score for personal teaching efficacy is 54 and for teaching efficacy is 37.

School Context. The contexts of school placements were measured through students' reports. Students rated their placements based on physical school context, affective school context, physical classroom context, affective classroom context, student behavior, cooperating teacher as a role model, cooperating teacher's treatment of children, the relationship between the student and the cooperating teacher, and overall performance of the supervising teacher. The measures created a school context rating (range 4-20), classroom context rating (3-15), and teacher rating (4-20). The high correlations for these measures allowed combining the scores for one context measure (range 11-55).

The socioeconomic status of the school was determined by the percentage of students eligible for the Chapter I program. These data came from the Georgia Department of Education, Office of Statistical Services. The higher the number (percentage of Chapter I students), the lower the school SES.

Performance. Each student participated in two full-time field experiences, one in kindergarten and one in Grades 1-5. The first experience is called "practicum," and the second experience is called "student teaching." Performances in both experiences were rated using instruments in *Student Teaching: An Interactive Approach* (Galina & Jordan, 1991), a program developed for an urban university's early childhood program. Student teaching performance was rated once a week in the following areas: transitions and routines; small group instruction; large group instruction; student assessment; interpersonal skills; planning; organization; teaching skills; management of time, resources, and environment; and professionalism. The college supervisor's weekly observation and cooperating teacher and student teacher reports of events during the week formed the basis for the rating. Each assessment category has a list of factors to be considered in rating performance. College supervisors are trained in the use of the rating system by watching it being administered for one quarter and then being watched and advised while using it for another quarter. All college supervisors meet each quarter and rate videotapes of student teachers and compare ratings for reliability. At the end of student teaching, each student has a "score," which is the percentage of all possible points in all categories.

Data Collection

Students completed the EAI and Teacher Efficacy Scale upon entry to the program, before entry to the practicum experience, and upon completion of both student teaching experiences.

Students rated school context for practicum and student teaching experiences. School SES was determined for each student's school for each experience using the Georgia Chapter I ratings.

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Statistical Analyses

Pearson product-moment correlations were computed for all pairs of variables. The variables are (a) performance in practicum (PRPER); (b) performance in student teaching (STPER); (c) teacher-centered educational attitude (EAIT1, 2, 3); (d) student-centered educational attitude (EAIS1, 2, 3); (e) teaching efficacy (EFFT1, 2, 3); (f) personal teaching efficacy (EFFP1, 2, 3); (g) practicum socioeconomic status of school (PRSES); (h) student teaching socioeconomic status of school (STSES); (i) student teaching context of school (STCXT); and (j) practicum context of school (PRCXT). The resulting correlation matrix is shown in Table 1.1.

Backward elimination regression analysis was performed for the models outlined in Figure 1.1. This method was chosen because it is hypothesized that school context, school SES, and attitudes affect attitudes and performance, but no order of influence is posited. Backward elimination eliminates nonsignificant variables step-by-step in a regression equation based on the variable's *F* value. The process produces the strongest model, one for which all variables have a significant influence on the dependent variable.

The context and SES of practicum and student teaching placements were not factors in predicting attitudes at the end of the program. The most powerful model with teaching efficacy as the dependent variable included personal teaching efficacy and teacher-centered attitude (see Tables 1.2 and 1.3), which account for 11% of the variance. Teaching efficacy and student-centered attitude were included in the most powerful model with personal teaching efficacy as the dependent variable (see Tables 1.4 and 1.5) explaining 20% of the variance. Teacher-centered attitude (a negative relationship) and personal teaching efficacy explained 24% of the variance in student-centered attitude (see Tables 1.6 and 1.7). The most powerful model with teacher-centered attitude as the dependent variable (see Tables 1.8 and 1.9) included teaching efficacy and student-centered attitude, which explained 15% of the variance.

The most powerful model with practicum performance as the dependent variable (Tables 1.10 and 1.11) includes practicum SES and school context, personal teaching efficacy at end of program, and teacher-centered attitude at end of program (a negative relationship), which explained 24% of the variance. The more traditional and directive the teaching attitude, the lower rated the performance. The model also shows that the lower the school SES, the lower rated the performance in practicum. Students with greater faith in their ability to affect student learning outcomes received higher practicum performance ratings.

TABLE 1.1 Pearson Product-Moment Correlations for Field Experiences, Economic Diversity, and Context; Educational Attitudes; and Performance of Early Childhood Education Students

	PRPER	*STPER*	*EAIT1*	*EAIT2*	*EAIT3*	*EAIS1*	*EAIS2*	*EAIS3*	*EFFT1*
PRPER	—	0.34**	−0.31**	−0.31**	−0.30**	0.11	0.18*	0.20*	0.17*
STPER	0.34**	—	−0.10	−0.24**	−0.22*	−0.01	0.21*	0.11	0.07
EAIT1	−0.31**	−0.10	—	0.53**	0.47**	−0.35**	−0.41**	−0.22*	−0.32**
EAIT2	−0.31**	−0.24**	0.53**	—	0.65**	−0.22**	−0.45**	−0.30**	−0.18*
EAIT3	−0.30**	−0.22*	0.47**	0.65**	—	−0.21*	−0.33**	−0.31**	−0.31**
EAIS1	0.11	−0.01	−0.35**	−0.22**	−0.21*	—	0.47**	0.35**	−0.03
EAIS2	0.18*	0.21*	−0.41**	−0.45**	−0.33**	0.47**	—	0.54**	0.05
EAIS3	0.20*	0.11	−0.22*	−0.30**	−0.31**	0.35**	0.54**	—	0.05
EFFT1	0.17*	0.07	−0.32**	−0.18*	−0.31**	−0.03	0.05	0.05	—
EFFT2	0.20*	0.20*	−0.16	−0.43**	−0.26**	0.08	0.22**	0.15	0.22**
EFFT3	0.26**	0.20*	−0.27**	−0.32**	−0.34**	0.12	0.15	0.24**	0.29**
EFFP1	0.00	−0.18*	0.13	0.14	0.12	0.23**	−0.05	0.05	0.03
EFFP2	0.22*	0.03	−0.09	−0.24**	−0.10	0.28**	0.38**	0.33**	0.06
EFFP3	0.21*	0.09	−0.22**	−0.32**	−0.18*	0.33**	0.42**	0.43**	0.03
PRSES	−0.22*	0.03	0.12	0.08	0.21*	0.12	0.02	0.07	−0.10
STSES	0.05	0.27**	−0.11	−0.19*	−0.10	0.14	0.29**	0.19*	−0.10
PRCXT	0.27**	−0.03	0.03	0.00	−0.11	−0.22**	−0.14	−0.16	0.19*
STCXT	−0.06	−0.03	0.13	0.11	−0.07	0.05	−0.14	0.10	0.01

	EFFT2	*EFFT3*	*EFFP1*	*EFFP2*	*EFFP3*	*PRSES*	*STSES*	*PRCXT*	*STCXT*
PRPER	0.20*	0.26**	0.00	0.22*	0.21*	−0.22*	0.05	0.27**	−0.06
STPER	0.20*	0.20*	−0.18*	0.03	0.09	0.03	0.27**	0.03	−0.03
EAIT1	−0.16	−0.27**	0.13	−0.09	−0.22**	0.12	−0.11	0.03	0.13
EAIT2	−0.43**	−0.32**	0.14	−0.24**	−0.32**	0.08	−0.19*	0.00	0.11
EAIT3	−0.26**	−0.34**	0.12	−0.10	−0.18*	0.21*	−0.10	0.11	−0.07
EAIS1	0.08	0.12	0.23**	0.28**	0.33**	0.12	0.14	0.22**	0.05
EAIS2	0.22**	0.15	−0.05	0.38**	0.42**	0.02	0.29**	0.14	−0.14
EAIS3	0.15	0.24**	0.05	0.33**	0.43**	0.07	0.19*	0.16	0.10
EFFT1	0.22**	0.29**	0.03	0.06	0.03	−0.10	−0.10	0.19*	0.01
EFFT2	—	0.53**	0.04	0.27**	0.30**	−0.02	0.14	0.05	0.00
EFFT3	0.53**	—	−0.08	0.13	0.24**	−0.15	0.08	0.01	0.09
EFFP1	0.04	−0.08	—	0.32**	0.20*	0.04	−0.11	0.03	0.13
EFFP2	0.27**	0.13	0.32**	—	0.55**	0.14	0.14	0.04	−0.06
EFFP3	0.30**	0.24**	0.20*	0.55**	—	0.08	0.18	0.10	0.05
PRSES	0.14	−0.15	0.04	0.14	0.08	—	0.03	0.24**	0.00
STSES	0.05	0.08	−0.11	0.14	0.18	0.03	—	0.01	−0.35**
PRCXT	0.00	0.01	−0.03	−0.04	−0.10	−0.24**	−0.01	—	−0.11
STCXT	—	0.09	0.13	−0.06	0.05	0.00	−0.35**	0.11	—

*$p < .05$; **$p < .01$.

Dependent Variables[1]	*Independent Variables*					
PRPER	PRSES[2]	EAIT2[3]	EAIS2	EFFT2	EFFP2	PRCXT[4]
STPER	STSES[5]	EAIT2	EAIS2	EFFT2	EFFP2	STCXT[6]
EAIS3	STSES	STCXT	EAIS3	EFFT3	EFFP3	
EAIT3	STSES	STCXT	EAIT3	EFFT3	EFFP3	
EFFT3	STSES	STCXT	EAIT3	EAIS3	EFFP3	
EFFP3	STSES	STCXT	EAIT3	EAIS3	EFFT3	

1. Practicum performance; student teaching performance; student-centered educational attitude (at end of program); teaching efficacy (at end of program); personal teaching efficacy (at end of program).
2. Practicum SES.
3. 2 = administration prior to practicum.
4. Practicum context.
5. Student teaching SES.
6. Student teaching context.

Figure 1.1. Models Tested by Backward Elimination Multiple Regression Analysis

TABLE 1.2 Model Variables and Coefficients for Teaching Efficacy at End of Program (EFFT3), Personal Teaching Efficacy at End of Program (EFFP3), and Teacher-Centered Attitude at End of Program (EAIT3)

Multiple *R*	.338		
R-squared	.114	*F*	6.973
Adjusted *R*-squared	0.98	Significance of *F*	.001
Standard error	4.558		

	Analysis of Variance		
	DF	*Sum of Squares*	*Mean Square*
Regression	2	293.630	146.815
Residual	108	2273.793	21.054

Variable	*Mean*	*Standard Deviation*
EFFT3	28.072	4.831
EFFP3	44.261	5.182
EAIT3	31.541	6.529

TABLE 1.3 Regression Coefficients for EFFT3 Regressed on EFFP3 and EAIT3

Variable	*B*	*Standard Error*	*Beta*	*T*	*Significance of T*
EFFP3	.197	.0856	.211	2.297	.024
EAIT3	–.172	.068	–.232	–2.530	.013

TABLE 1.4 Model Variables and Coefficients for Personal Teaching Efficacy at End of Program (EFFP3) Regressed on Teaching Efficacy at End of Program (EFFT3) and Student-Centered Attitudes at End of Program (EAIS3)

Multiple *R*	.444		
R-squared	.197	F	13.272
Adjusted *R*-squared	.182	Significance of *F*	.000
Standard error	4.685		

	Analysis of Variance		
	DF	*Sum of Squares*	*Mean Square*
Regression	2	582. 664	291.332
Residual	108	2370.759	21.951

Variable	*Mean*	*Standard Deviation*
EFFP3	44.261	5.182
EFFT3	29.072	4.831
EAIS3	91.450	3.875

TABLE 1.5 Regression Coefficients for EFFP3 Regressed on EFFT3 and EAIS3

Variable	*B*	*Standard Error B*	*Beta*	*T*	*Significance of T*
EFFT3	.180	.095	.168	1.898	.060
EAIS3	.504	.118	.377	4.268	.000

TABLE 1.6 Model Variables and Coefficients for Student-Centered Attitude at End of Program (EAIS3) Regressed on Teacher-Centered Attitude at End of Program (EAIT3) and Personal Teaching Efficacy at End of Program (EFFP3)

Multiple *R*	.490		
R-squared	.240	*F*	17.063
Adjusted *R*-squared	.226	Significance of *F*	.000
Standard error	3.409		

	Analysis of Variance		
	DF	*Sum of Squares*	*Mean Square*
Regression	2	396.543	198.271
Residual	108	1254.935	11.620

Variable	*Mean*	*Standard Deviation*
EAIS3	91.450	3.875
EAIT3	541	6.529
EFFP3	44.261	5.182

TABLE 1.7 Regression Coefficients for EAIS3 Regressed on EAIT3 and EFFP3

Variable	*B*	*Standard Error B*	*Beta*	*T*	*Significance of T*
EAIT3	–.159	.050	–.267	–3.145	.002
EFFP3	.276	.061	.369	4.343	.000

The most powerful model with student teaching performance as the dependent variable (Tables 1.12 and 1.13) includes student teaching SES and teacher-centered attitude at end of program (a negative relationship), accounting for 15% of the variance. Of interest, the relationship between performance and SES was positive, meaning the lower the school SES, the higher rated the performance.

Teacher-centered attitude predicted performance, which is not surprising in an early childhood program focused on student-centered teaching and learning. More interesting is that student-centered attitude is not a predictor of performance. The mean student-centered score indicates

TABLE 1.8 Model Variables and Coefficients for Teacher-Centered Attitude at End of Program (EAIT3) and Teaching Efficacy at End of Program (EFFT3) and Student-Centered Attitude (EAIS3) at End of Program

Multiple *R*	.384		
R-squared	.148	*F*	9.360
Adjusted *R*-squared	.132	Significance of F	.0002
Standard error	6.083		

	Analysis of Variance		
	DF	*Sum of Squares*	*Mean Square*
Regression	2	692.781	346.390
Residual	108	3996.787	37.007

Variable	*Mean*	*Standard Deviation*
EAIT3	31.541	6.529
EFFT3	29.072	4.831
EAIS3	91.450	3.875

TABLE 1.9 Regression Coefficients for EAIT3 Regressed on EFFT3 and EAIS3

Variable	*B*	*Standard Error B*	*Beta*	*T*	*Significance of T*
EAIT3	–.278	.123	–.206	–2.261	.026
EFFP3	–.478	.153	–.283	–3.116	.000

that most of the preservice teachers professed allegiance to more progressive attitudes and, because the EAI measures two separate dimensions, the key to better performance may be in reducing the teacher-centered dimension rather than increasing student-centered attitude.

Low SES had a negative relationship with performance during practicum and a positive relationship with student teaching performance. Being placed in schools serving larger numbers of children of poverty negatively affected students' practicum performance but positively affected student teaching performance. During student teaching, students requested either an urban or a suburban placement. Most of the lower SES

TABLE 1.10 Model Variables and Coefficients for Practicum Performance (PRPER) Regressed on Practicum SES (PRSES), Practicum Context (PRCXT), Personal Teaching Efficacy (EFFP3), and Teacher-Centered Attitude (EAIT3)

Multiple *R*	.490		
R-squared	.240	*F*	9.414
Adjusted *R*-squared	.215	Significance of *F*	.0000
Standard error	2.847		

	Analysis of Variance		
	DF	*Sum of Squares*	*Mean Square*
Regression	5	313.140	62.628
Residual	118	956.110	8.103

Variable	*Mean*	*Standard Deviation*
PRPER	94.250	3.212
PRSES	11.887	15.906
PRCXT	36.927	4.368
EFFP3	41.815	5.177
EAIT3	32.274	6.840

TABLE 1.11 Regression Coefficients for PRPER Regressed on PRSES, PRCXT, EFFP3, EAIT3

Variable	*B*	*Standard Error B*	*Beta*	*T*	*Significance of T*
PRSES	–.032	.016	–.161	–1.915	.058
PRCXT	.182	.061	.248	2.997	.003
EFFP3	.116	.052	.187	2.233	.027
EAIT3	–.132	.039	–.281	–3.383	.001

schools were urban schools. Students specifically choosing placement in lower SES schools seems to have created a "natural selection" of people who were more skilled and more confident in teaching greater numbers of children of poverty.

School context related only to practicum performance. It could be that difficulties in teaching led to a lower assessment of the placement context

TABLE 1.12 Model Variables and Coefficients for Student Teaching Performance (STPER) Regressed on Student Teaching SES (STSES) and Teacher-Centered Attitude (EAIT3)

Multiple *R*	.385	*F*	9.555
R-squared	.148	Significance of *F*	.0001
Adjusted *R*-squared	.133		
Standard error	2.252		

	Analysis of Variance		
	DF	*Sum of Squares*	*Mean Square*
Regression	2	96.932	48.466
Residual	110	557.936	5.072

Variable	*Mean*	*Standard Deviation*
STPER	96.389	2.418
STSES	18.301	22.635
EAIT3	32.319	6.844

TABLE 1.13 Regression Coefficients for STPER Regressed on STSES and EAIT3

Variable	*B*	*Standard Error B*	*Beta*	*T*	*Significance of T*
STSES	.024	.010	.225	2.517	.013
EAIT3	−.097	.032	−.275	−3.074	.003

based on the need for an explanation for less than anticipated success. Less than adequate context (whether real or perceived), relationships with cooperating teachers, and classroom role models seem to have a negative effect on the performance of practicum students. This finding underlines the importance of good and compatible field placements. School context was not a significant factor for student teaching performance; it may be that student teachers had more confidence and, thus, were less affected by external factors.

Personal teaching efficacy—confidence in one's ability to teach children—predicted student-centered attitude and teacher-centered attitude. A confident teacher may be more of a risk-taker who can move away from more traditional, teacher-centered ideas and behavior. Personal efficacy also was predictive of practicum performance but not of student teaching performance. This phenomenon may be explained by the fact that the efficacy measure was taken prior to practicum. An additional measure taken after practicum and before student teaching may have a positive relationship with student teaching performance.

Teaching efficacy—the belief in students' abilities—predicted teacher-centered attitude and personal teaching efficacy. The greater the belief in students' capacities to learn, the less teacher centered the attitude; a teacher who believes in her or his students may be more willing to let them be more active in their own learning. These models with attitudes as the dependent variables show a consistent pattern of efficacious teachers being more student centered.

These findings indicate the following:

1. Placing preservice teachers in schools with good morale, pleasant surroundings, and a compatible and welcoming cooperating teacher who is a good role model may be just as important as pupils' backgrounds in determining success in full-time field experiences.
2. Letting students choose to work in lower SES schools may enhance chances for success, a conclusion consistent with Haberman's (1987) theories about the importance of selection in educating urban teachers.
3. Students whose attitudes are consistent with teacher education program goals will enhance teaching performance.
4. Further analysis of these data, in terms of expanding the model by adding variables (e.g., attitude measures at the beginning of the program) and/or using other statistical techniques (e.g., path analysis), is indicated.

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2 Trusting Relations, Preservice Teachers, and Multicultural Schools

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ABSTRACT

Teacher educators are trying to find ways to better prepare prospective teachers for cross-cultural or culturally diverse settings. Yet little is known about new teachers' initial experiences. This study tracks a small cohort of secondary education student teachers throughout their semester internship. All the student teachers began their internship semester with apprehensions and misconceptions about their assigned schools. These apprehensions included inability to control and relate to students. Most of the student teachers were able to break through their initial fears by risking personal relations and revelations, attending to student voice, handling racial confrontations, and creating a multicultural curriculum. This research suggests that creating trusting relations might be more important and more

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difficult than is generally acknowledged in the learning-to-teach or the multicultural literature. The chapter ends with implications and recommendations for teacher education.

By the year 2000, one out of three students in K-12 classrooms across the United States are projected to be ethnic minorities (Banks & Banks, 1989). In contrast, the demographic profile of K-12 teachers remains stable and homogeneous. The majority of these teachers are, and will continue to be, white, married females who went to small town or suburban schools (Zimpher & Ashburn, 1992). This cultural mismatch heightens concern that, in the future, schools will be even less prepared than they are now to provide ethnic minorities with equal and adequate educational experiences.

Although we know that most beginning teachers prefer to teach in the type of schools they themselves attended, we have little elaborated knowledge of their perceptions of, concerns about, or experiences in culturally diverse schools. Lacking this empirical knowledge, the teacher education curriculum has been left without a solid conceptual basis for incorporating diversity issues. Typically, information about cultural diversity is taught in a separate class or infused in professional education courses. Unfortunately, these approaches can have perverse effects, actually reinforcing the stereotypes they were meant to overcome (McDiarmid, 1992).

This chapter gives an account of a small cohort of student teachers. It explores their initial perceptions and experiences of successfully teaching in cross-cultural settings. An underlying assumption is that teaching in these settings raises issues for new teachers that they would not otherwise encounter. Learning about student teaching success can assist teacher educators in constructing a more meaningful professional preparation curriculum. With few exceptions (see, for instance, Ross & Smith, 1992), little is reported in the literature regarding beginning teachers' diversity beliefs derived from actual experience. Generally, studies are based on hypothetical cases (Paine, 1990) or on brief intervention strategies (McDiarmid, 1992).

My interest in this issue started with comments I heard about "city" schools. Many of the preservice students I taught had concerns about teaching in them. I began to record their stories and then created an open-ended set of questions that I used for taped interviews and for teaching belief papers. Types of questions are as follows: What were your first perceptions of and experiences in this school? Have any of these perceptions changed? What does it take to be a successful teacher in this school? I collected data throughout the student teaching semester. Two white females were assigned to McDuff, a 95% African American junior high school. Four white students (three females and one male) were assigned to Crandall, a senior high whose racial/ethnic composition was 40% African American, 30% European American, 15% Hispanic American, and 15% Asian American. The findings are based on classroom observations, teaching videotapes, formal interviews, student papers on teaching beliefs, seminar discussions, and casual conversations.

All the student teachers began their internship semester with apprehensions about controlling and relating to students. They also were concerned that they would receive some challenges because of their race. Most were able to break through their fears by risking personal relations with their students. They told students about themselves; asked students about their interests, histories, and cultural practices; reacted with humor when called racists; and sought out culturally sensitive curriculum materials. Their students came to see these actions as caring about them as individuals and responded with more engaged learning behaviors. The student teacher who had the least successful experience was unable to establish close bonds with her students. Her body language, tone of voice, and referential language all suggested a view of student as "other." The study suggests that building trusting relations with students is a significant aspect of learning to teach and that it challenges work that deemphasizes the importance of affective aspects of teaching.

Apprehensions and Misconceptions

Like so many student teachers, this group of secondary education interns had few prior experiences in multicultural or predominately black schools. Most of them had attended white, middle-class, suburban public or private schools. Their upbringing had given many of them a "sheltered" or "slanted" view of the world, that of a "happy white community" in which there were few or no people of color. These students were concerned that they would not be liked because they were white and that they would have little control over their classes: "I went in with some assumptions . . . that the students were all going to be mean to me, and they weren't gonna like me because I was white . . ." As one student admitted:

> Those preconceptions were because the students were black. I was not sure if they would accept me. I will admit the students' color scared me in the beginning, which triggered all of the

> nervous feeling. . . . I felt that there might be some tension because of our racial differences.

In addition to their sheltered upbringing, several factors reinforced stereotyped thinking. There were frequent news reports of drugs, weapons, and violence in area schools; stories of security guards and newly installed electronic security systems; and remarks from families, friends, and roommates, for example, "I can't believe you're going to teach [there]! You have to get out of that." Sometimes students mistakenly presumed that Crandall, the suburban school to which they were assigned, was white. For these students, the initial experience of entering a crowded hallway of mostly black and Hispanic students was one of shock and disorientation. One student said she felt as though she stuck out "like a sore thumb" because of the "overwhelming" number of minority students in the school.

Initial experiences with students—or stories of other teachers' experiences—also shaped apprehensive perceptions. One student heard rumors among the English department faculty that her lowest track classes were "inhabited by numerous delinquent students who will not cooperate within the classroom and who are not interested in learning." Students were told about "bad" classes and cautioned not to take on black kids, who might hit you in the face. They were also warned not to get in the middle of a fight because they couldn't be sure students weren't carrying guns or knives. These fears were reinforced by the unpredictable, scowling, or disruptive behavior of a few students. When the school's top wrestler began shoving desks, Christine worried, "So how was I (all 5'2" and 120 pounds of me) going to keep control?"

Gender was a complicating factor for other female students. Alicia felt harassed when a group of Puerto Rican students whistled as she passed them in the hall, and Jessica carried similar memories from a previous field experience in a different school. African American high school males had questioned her presence in their school. Like Alicia, Jessica, a youthful-looking blond, had been mistaken for a high school student:

> Every time I had walked through the front doors, students would have some kind of nasty or rude comment to make about my color or sex. That had shaken me up a bit and I did not want to go through that again. Those students had intimidated me.

She feared that these types of encounters would be repeated at the junior high to which she was assigned and would prevent her from being an effective teacher.

Establishing Trusting Personal Relations

Overcoming these fears, suspicions, and stereotypes was essential if these interns were to have a successful student teaching experience. How did this occur? Certainly the support of administrators and other teachers facilitated the induction process. Not all teachers told horror stories. Many positively mentored the interns, introduced them to students, and initiated them into the school's culture. Interns' fears were also allayed when students saw that buildings were secure, criminals did not roam the halls, and their pupils were calmer than they anticipated.

These, however, were not the main types of stories I heard. In reading students' papers, remembering seminar discussions, and listening to the tape recordings of our interview sessions, I was continually struck by the language of personal relationships. Students talked about creating an environment of mutual respect as well as what they did to break down barriers, which, they came to realize, were often of their own making. The process of establishing trusting relations involved removing these obstacles. This was done in various ways, chief among them being risking personal revelations, expressing interest in students as persons, handling direct confrontations, and enacting a culturally responsive curriculum. Their willingness to engage with students in these ways established the connections necessary for them to overcome barriers to teaching in these settings.

Risking Personal Revelations

Pupil relations often present a quandary for student teachers, especially at the high school level. Sometimes only 4 years older than their pupils, they find themselves wanting to casually relate to their pupils, but pull back for fear of not seeming professional. How to be teacher and friend (or whether to be friend) is a constant tension. On the one hand, they want respect and believe they must distance themselves and establish rules to earn it. On the other hand, they want to be liked. They want students to affirm their person as well as their professional role.

This tension was increased for these white student teachers in their culturally diverse and predominantly black schools. Initial fears of being neither liked nor respected were intense, making it more difficult, but more important, to quickly and skillfully find ways of establishing connections that balanced the personal and professional. Seminar discussions indicated that the interns were consciously working out this dilemma.

Sometimes they were too friendly, sometimes too distant. The greater danger, however, appeared to be distance: the failure to let their pupils know they cared about and trusted them enough to let them into their own personal lives.

Classes, cooperating teachers, and individual pupils often gave the interns opportunities to connect through personal stories. The interns talked about their families, the kind of schools they went to, where they lived, their university experiences, job interviews, hobbies, and so forth. On her first student teaching day, Alicia, whose "anxiety grew" as she made her way to her classroom, was immediately put at ease by her classes and cooperating teacher. Mr. Johnson told her about the school and students, walked her around the school, introduced her to other faculty members, and had her spend the first day in front of the room talking to his classes.

About 3 weeks into the semester at her school, Jessica decided to spend some class time talking about herself. She had regularly engaged in casual conversation with students about sports or news events but felt that even more personal connection was necessary. Feeling that she was spending too much time quieting or reprimanding her students, Jessica told Mr. Varnum, "I just feel like I'm bitching all the time at these students, and it just seems too tedious for me." Letting students ask her personal, but not unbounded, questions seemed to create a more friendly, less tedious environment in which Jessica felt "much happier." Her "loosening up a bit" was appreciated by students, who candidly told her on the last day of class: "When you first came in here we didn't like you because we thought you were so strict and so mean, but then you were really cool." Having been intimidated by race differences, Jessica had armed herself with classroom management books and a list of rules. By allowing the person of Jessica to come through the role of Ms. Stevens, Jessica began to establish some needed connections.

Sometimes "connecting" occasions took a "racial" turn, as when Claire's students teased her about her "white" taste in music and lack of rhythm or when Helen's students asked if it "felt different to be white." Her junior high girls were so fascinated with her straight, blond hair that they touched it and asked if she used baby oil to get it soft. During his pre-student teaching experience at McDuff, Matt's junior high students pointedly asked how he felt about being in a black school. He responded and just as directly asked how they felt about having a white teacher. Matt spent many class periods after that engaged in discussions about race. The junior high students in particular, some of whom had never had a white teacher, seemed to need to explore that aspect of their relation with the student teachers. Sometimes, as we will see later, that exploration was less friendly than in these encounters.

The interns' willingness to share their lives made a difference in their comfort levels with students and in their students' feelings about them. As Claire, whose reputation spread among her peers for her ability to connect with her students, concluded about her intern experience:

> I could not believe how interested they were in my own life. . . . I let them know about my painting and I would talk about that and how I was doing it, and they would ask me how it was coming, and things like that. . . . I really developed a special relationship with many of my students. I think when you share your own thoughts and ideas and personal stories, the class becomes more accepting and doesn't look at coming to class as a chore.

Evoking Student Voice

As these incidents indicate, the telling of stories was a reciprocal event. Although student teachers had to be trusting enough to let students into their lives, they simultaneously expressed interest in their pupils' lives. Learning about their students helped decrease their apprehension. As Alice admitted, "I had to get to know them before I could feel that comfortable around them and realize that, you know, it [my fear] was stupid." Listening to student stories also provided a way for student teachers to express personal concern and caring, to engage students in classroom activities, and to learn from their students. Throughout the semester, the student teachers constantly referred to how much they were learning because of cultural differences. Their obvious enjoyment of their learning role reversed the typical teacher-student relation and occasioned deeper trust and respect.

The studio setting of the art room provided Claire with multiple opportunities to express personal interest. She never spent class time at her desk. Except for the time she introduced and explained new projects, Claire walked the room, monitoring and assisting with projects. During that time, she tried to do more than comment on design and composition. In fact, that was often merely the occasion to engage in more personal discourse. "I never sit at . . . I never used the desk, only to take attendance, and then I'm always walking. . . . I always make sure I hit every table, and I talk to everybody."

Other student teachers, whose classes were more formally structured, had to find other ways of expressing personal interest in their students' lives. They were able to do this through group discussions, individual projects, and before- or after-class conversations. Alicia, for instance, tried to bring students' personal experiences into her discussion of literature: "I showed an interest in their interests, and they appreciated the personal touch I tried to give to my lessons." Matt gave students a lot of choice on social studies projects. He often distributed lists of possibilities. Christine, who taught drama and public speaking, encouraged students to draw on meaningful life experiences for their speeches: "I always encouraged them to share something of importance to themselves within the class, and in this way, we got to know the students through introduction, demonstration, information, and personal narrative speeches."

Learning about students' interests was also a way of decreasing school alienation and engaging students in class assignments. Christine's writing focused extensively on this matter. By speaking privately and personally to students, Christine was able to encourage class engagement from withdrawn students. Boncile, a Nigerian student, had developed the habit of resting her head on her desk. After Christine privately encouraged her to contribute and promised help in improving her English, she began smiling and interacting with peers and participated frequently. She became personable and confident about classroom assignments. Christine also convinced Terrance, who missed the first few weeks of school due to chicken pox, that failure wasn't inevitable. To do this, she had to discover his area of interest (basketball), become knowledgeable, and initiate basketball conversations before he was willing to come to school early for tutoring and missed assignments.

Deliberately evoking student voice also placed students in the role of teacher and was often experienced as an exhilarating experience by the student teachers.

> Perhaps that's yet another reason why I want to teach at a school like Crandall. Every day is different, and every day I learned something new about my students.
>
> I just got all excited in this environment that I had never been in and learned all these new things . . . every day I learned. . . . And they liked the fact that they could tell me . . . teach me new words, or show me new music.

Helen's students delighted her with superstitions and myths from their cultures and Evelyn's amazed her with information about Africa: its size, diversity, traditions, and rituals. Matt found Crandall High to be an ideal situation for creating a multicultural curriculum. His culturally diverse students served as resources for himself and each other: "Like if I was teaching on Jainism I had a Jain student come in that could talk to them." He bemoaned his own limiting monocultural education "because so many misconceptions form out of not knowing, not experiencing. Where I grew up, it was a terrible, terrible racism."

The interns' definitions of a good teacher often included learning from their students:

> Let them teach you something. That seemed to work a lot. Me asking them questions rather than them always asking me questions and letting them know that, I do want to learn more about them, and that I don't know everything about different [cultures].

Other student teachers similarly observed that students like teachers who get them involved, who show an interest in their lives, and who are having a good time. They tend not to like those who are all work, can't relate to their personal lives, and "remain distant."

Coping With Confrontations

Sharing stories about themselves and eliciting stories about their students were not, however, enough to cover the cultural space between the student teachers and all their pupils. The issue of cultural difference continued to crop up—sometimes humorously, at other times more seriously. In both types of situations, the student teachers had to be willing and able to handle racial texts and confrontations.

Claire seemed to maintain the most lighthearted interchange with her students. The informal climate of the art studio enhanced her inclination to engage, relate, and interact. In most classes, Claire played background music as a way of prompting more "right brain" activity. Students took turns selecting the music—much of which was unfamiliar to Claire. This often resulted in student laughter and comments such as white people "can't dance" or "can't sing it right." Rather than be offended, Claire laughed along with her students and commented in her interview about the importance of humor. When students used terms outside her frame of reference such as *lunchbox, BAMA,* and *carrying,* she treated them as learning opportunities—expressing interest in the new adolescent lexicon.

Like Claire, all the interns were expected to be comfortable with racial and cultural expressions. Jessica, a fair-skinned blond, evoked a round of appreciative laughter as she waited outside the school building one day after school. A friend, who came to pick her up after school, drove past her as she stood in the midst of her African American students. "I can't believe it," she joked. "It's not like I don't stand out in this crowd!" Claire got a similar humorous response in a painting class following her use of the Spanish *negro*. She wrote in a seminar paper about this unintended incident:

> I was trying to communicate with a Hispanic student and tell him to use some black. The Spanish word for black is *negro* so I repeatedly used the word, and every time I did, my student Leroy kept saying, "What?" Finally I said to Leroy, "I haven't been asking you anything, why do you keep saying what?" His reply was, "Don't you keep saying negro?!!" At that point we all lost it.

Student teachers seemed to do better when they acknowledged rather than ignored racial differences. Pretending that differences did not exist put more distance between the interns and their students. Dealing with their own whiteness—and students' color—was a way of connecting. It helped address student concerns about teacher prejudice and discrimination.

These concerns about prejudice often came when students felt that they might be or had been treated unfairly. Student accusations of prejudice were more prevalent at the African American junior high than they were at the multicultural high school. Incidents occurred at both places, however. Interns heard themselves or other white teachers called prejudiced or racist. This occurred both in "stage whispers" and in face-to-face confrontations. They heard remarks such as the following: "If a white teacher hadn't suspended me. . . . I heard you were a racist. . . . I got this bad grade because I'm black and she's white. . . . They don't respect you because of your complexion. . . . You're just yelling at me because I'm black."

Interns did well to seize on these opportunities when they could. Sometimes simple rejoinders were helpful. Student teachers reported such remarks as the following: "Look, do you think I would be teaching in this school if I were racist?" or "Other students got good grades and *they're* black!" Some students seemed to need their teachers to deny being racist. It was an issue that, for some, had to be dealt with in a direct manner. This usually happened with younger students who had almost no prior contact with whites. Teachers had to assure these students that they regarded them as persons, and not with an inferior classification.

Generally, however, concerns about racism required more prolonged interactions. A number of the student teachers commented on the need to prove that they weren't racist and to establish trust before they could engage in sensitive discussions with students about race relations. In an early discussion with McDuff students about *Eyes on the Prize*, Matt experienced what he called "hostility towards . . . all whites in general." He spent a lot of time talking with students about the civil rights movement but also had to field comments about the Mike Tyson trial, the superiority of black genes, and his own beliefs about racism. Believing that many of the students had never had the opportunity to discuss such matters with a white person before, he encouraged open conversations and personal questioning. These conversations seemed to persuade students that Matt was trustworthy and that not all whites were racist.

Enacting a Responsive Curriculum

Many educators have promoted the importance of a culturally responsive pedagogy for purposes of raising student self-esteem, promoting cultural identity for marginalized groups, or correcting a Western-dominated view of the world (Banks & Banks, 1989). From my interviews with these student teachers, I began to consider another reason, one that is more relational. By developing a curriculum that was multicultural and attending to various learning styles and needs, the student teachers were communicating to their pupils in yet another way that they cared about them. They cared about them as students, so they wanted to help them be academically successful. And they cared about them as people, so they attended to meaningful cultural constructions.

Claire did extensive research at the Museum of African Art and brought back to her students African art books and audiotapes of African music. Jessica taught units on race relations and civil rights, incorporated the roles of blacks and women in the American Revolution, and reexamined slavery from the slave's perspective "as opposed to the European-white male story." As project choices, Matt included the Hispanic or Mexican influence on the cowboy and the role of women on the western Plains. He set up simulated debates between W. E. B. DuBois and Booker T. Washington and, in the unit covering the Spanish-American War, engaged students in considering why Mexicans might call these events the American invasion. He also covered racial segregation in the military, the role of the 93rd Division in World War II, and the treatment of black soldiers when they returned home as heroes. Helen discovered there were only four minority writers in her literature anthology and so she supplemented poetry in the text with rap and poetry written by minorities.

Several courses to which student teachers were assigned lent themselves to individual or group projects. The student teachers often encouraged their pupils to be culturally expressive in these curricular spaces. Matt and Alicia both engaged their students in heritage projects. For Alicia, "the results were amazing. We heard stories from all over the world: Africa, Haiti, Japan, Vietnam, Spain, Ireland, Italy, Russia, Czechoslovakia, Romania . . ." Claire had her art students paint symbolic self-portraits after they studied Frida Kahlo, a Mexican artist. Like Alicia, she marveled at how much she learned by questioning her culturally diverse class about their symbols: "Many symbols were cultural icons that I never knew about."

More than any other student teacher, Matt had given the nature of the curriculum considerable thought. Although the English and art student teachers at Crandall High School were impressed with the multicultural nature of the curriculum and those at McDuff called their curriculum Afrocentric, Matt had the impression "that some teachers included other cultures in their curriculum just because they were told they had to by the higher administration." Instead of consistently grappling with the question, "What are we trying to teach," Matt found teachers covering multicultural content "quickly" and briefly "so they could add enough questions about women and minorities on the final examination to appease school district authorities."

Balking at this approach to curriculum construction, Matt talked about how multicultural education has to be authentic, how you can't spend hours discussing "this obsolete [white] person that I never even heard about" and then only 2 or 3 minutes on Booker T. Washington. Based partially on these experiences, Matt developed a framework for successful teaching in culturally diverse schools, which included respecting students' backgrounds, discussing different cultures in the curriculum, giving students opportunities to explore their culture and other cultures, and honestly dealing with current cultural issues. "Students can tell when you include information about culture as a token fact or activity."

But implementing a multicultural curriculum did not always result in more engaged learning or improved classroom relations. The student teachers had to be prepared for the unanticipated consequences of their actions. During a unit on personal narrative speeches in a culturally diverse class, Christine reported an incident that "absolutely horrified" her. A Guatemalan student, Ramona, told about coming to America.

Overcoming her reticence and second-language problems, Ramona narrated the story of a family who entered the United States illegally for medical assistance, "traveling in subhuman conditions so they would not be discovered by the police." These controversial words struck a nerve in some of Ramona's classmates, who interrupted with shouts of *spic*. Feeling she could neither ignore the comments nor handle the disruption merely by assigning detentions, Christine recalled two other speeches that day that focused on racial tensions. One African American student had spoken about being harassed by police, another about being called *nigger* in a restaurant.

Christine reminded the class about the speeches and asked who had experienced racial discrimination. After several students told their stories and how such treatment made them feel, Christine pointed out the similarities of humiliation and degradation, despite differences in background and culture, and the need to create at least one environment in which each individual could feel safe from racial discrimination. When students responded that nothing could be done to stop racial hatred and racism in the United States, Christine mentioned the cross-cultural friendship patterns in the classroom and their willingness to defend each other and "to fight against the ignorance which lies at the root of racism by simply getting to know one another." Asking again what they could do to eliminate racism, several students responded: getting to know people from various cultures, refusing to use racial slurs and insults, and bringing their culturally different friends into their neighborhoods and homes. Although Christine's attempts to provide a culturally responsive curriculum had the unintended effect of eliciting cultural insensitivity, she was able to use the occasion for deeper lessons on race and racism.

Although few student teachers encountered a situation as volatile as Christine's, they all found themselves having to be adaptable in responding to student needs. Conscious of both individual and cultural differences, Matt deliberately varied his teaching style: "On one day I might lecture using advanced organizers, the next day I might use a cooperative learning strategy." Frustrated that other teachers let a Spanish-speaking student do other work in class or "sit and do nothing," Jessica was determined to help Carla learn history. She moved her next to a bilingual student who could be an interpreter, met with her 2 days a week after school, and let her take tests orally. Jessica also kept "unengaged" students after class. If they needed extra help, she met with them before or after school. If the problem was personal, she "laid off" but reminded them of their responsibility. Determined not to let any students submit incomplete assignments or get poor grades, Jessica tried not to move ahead until students felt comfortable with the material they were having trouble with.

Claire had as many as 15 ESOL students in any given class. Not anticipating this language barrier, Claire kept searching for new ways to explain lessons. She used a lot of visuals and constantly walked around the room so she could pick up on what students did not understand. Like Jessica, she employed bilingual students to interpret and picked up a few Spanish words herself. She also regularly prepared a handout with step-by-step instructions for each art project.

Discussion

This analysis is not meant to suggest that these student teachers did everything right or that their actions solved all the educational and social problems that accompany cultural diversity. Matt realized early in the semester, for instance, that the purpose of learning was not self-evident to students. So he discussed with his classes why they study history and "what kind of history" should be studied. Reasons students gave for studying other cultures included ending racism, understanding different cultures, breaking down barriers, and being more educated. But not all students bought into this ideology. A small group of African American males shunned other black students who were academically successful and failed their classes in disproportionate numbers. They muttered comments about classmates, for example, "Well, what is he doing? What is he tryin' to show?" and about teachers, "He's tryin' to make me white." Matt was frustrated by the absence of minorities among the faculty and attributed student alienation to the perception that education was white imposition.

Although the student teachers were not successful in relating to all their students, the most successful experiences were characterized by trusting relations. Teacher educators, cooperating teachers, and supervisors need to work with student teachers to help them voice and overcome apprehensions about student teaching in cross-cultural settings. By helping prospective teachers understand the importance of personal relations and helping them develop interpersonal skills, more teachers are likely both to want to teach in culturally diverse schools and to teach in them successfully.

Teacher education programs should assist students in directly confronting their own racial ignorance, fears, and stereotypes. This can be done through autobiographies, case studies, early field experiences, and seminar discussions. To help overcome stereotypes and perceptions of "the other," prospective teachers can read short stories and autobiographical sketches representing a variety of cultures. They can also shadow particular students in their field placements. Giving preservice teachers real roles to play in the classroom will prevent them from feeling like "outsiders" and establishing distance from their students—distance that will later be difficult to overcome. Field sites should also be carefully selected and monitored. They should have a strong but accessible administration and teachers who have positive attitudes toward their students and are willing to discuss race issues and concerns. The school should have a multicultural curriculum focus and resources available for the student teacher.

Prospective teachers should also be taught explicitly about the importance of creating classroom environments where there is mutual trust and respect. Classrooms such as these do not naturally spring into existence; they must be constructed by teachers and students. Although some students resist this construction, most seem eager for teachers who will reach across cultural barriers. Ways these student teachers accomplished that feat was by working on personal relations through several routes: being interested in students' lives, sharing their own lives, accepting racial challenges, and creating a multicultural curriculum and classroom environment. These types of successes should be shared with prospective students. Absent trusting relations, new teachers will not be effective in cross-cultural settings, no matter how sound their subject matter and pedagogical knowledge.

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3

Community Field Experiences and Teacher Preparation for Diversity: A Case Study

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ABSTRACT

Despite the potential value of community field experiences in preservice teacher education, the idea has largely been ignored by teacher educators and researchers alike. This chapter presents a case study of one program that provides community field experiences to prospective teachers with the goal of developing greater cultural sensitivity and intercultural teaching competence. The case study illuminates certain positive outcomes of such experiences as well as some of the pitfalls. The findings argue for the inclusion of structured community field experiences as integral parts of teacher preparation to effect personal and professional changes in preservice teachers that offer the potential for more culturally relevant teaching.

Historical and Conceptual Perspectives

The notion of community field experiences in the education of teachers has a long history in the United States. The Flowers report (Flowers, Patterson, Stratemeyer, & Lindsey, 1948), which initiated the modern era of school-based experiences in U.S. teacher education, defined schools and their communities as sites for field experiences. The report gave much attention to various kinds of community experiences for prospective teachers to enable them to better use community agencies and resources in the school program, to help them learn about their students and their families, to foster a greater sense of community service among both teachers and students, and generally to help to break down the barriers between schools and communities by creating more community-responsive schools.

Despite this early attention, community experiences in teacher education have received only sporadic attention in the literature and in practice. In one notable major report on teacher education in the United States, B. O. Smith's (1980) *A Design for a School of Pedagogy*, schools and their communities were defined as "pedagogical training laboratories," a definition that rejected the restriction of teacher education field experience to school settings alone (also see Blair & Erickson, 1964; Hodgdon & Saunders, 1951). In the National Teacher Corps, which educated thousands of teachers between 1966 and 1982 to teach in schools serving low-income families, community experiences were a central part of the education of all interns

(LeBaron & Royster, 1974; W. Smith, 1980; Weiner, 1993). In the late 1960s, Cuban (1969) argued that teacher education programs must shift their center of gravity from the university to the classroom and community. Today there is much evidence that students' educational and psychological growth occurs most fruitfully in settings that draw on family and community strengths (e.g., Au & Kawakami, 1994; Ladson-Billings, 1994; Moll, 1992).

For novice and experienced teachers alike, there is a widespread problem of low expectations for the achievement of poor students of color, and prospective teachers often are reluctant even to teach students with backgrounds different than their own and to interact with parents of these students (Zeichner, 1993). Many candidates come to their teacher education programs viewing diversity as a problem rather than a resource (Paine, 1989) and generally have little knowledge beyond stereotypes about different groups in the United States, their cultures, their histories, and their participation in and contributions to life in the United States (Lauderdale & Deaton, 1993; Wayson, 1988).

As recent demographic analyses of teacher education institutions have shown, faculty in teacher education programs often lack the same kind of diverse cultural experiences that their students lack, including teaching experience in culturally diverse or culturally different schools (e.g., Haberman, 1987; Howey & Zimpher, 1990; Melnick & Zeichner, 1994).

One common response to this need for an experiential component that addresses issues of cultural competence has been to increase the placement of practicum students and student teachers in schools serving culturally diverse or different student populations. Because many schools are isolated from their communities and not responsive to community cultures, however, these school placements alone most often do not provide the kind of community contact that is needed to overcome negative attitudes toward culturally different students, their families, and communities (Zeichner, 1993), and these placements sometimes end up strengthening and reinforcing stereotypes rather than stimulating their reexamination (Haberman & Post, 1992).

Varieties of Community Field Experiences

Despite the general neglect of community-based teacher education, various kinds of community field experiences have been implemented by teacher educators. These include very brief experiences associated with particular courses such as the "cultural plunges" in the Introduction to Multicultural Education course at San Diego State University (Nieto, 1994; Tran, Young, & DiLella, 1994), early field experience practicums that precede student teaching (Mungo, 1980), and living and student teaching for a semester in culturally different communities (Mahan, 1982; Mahan, Fortney, & Garcia, 1983).

Sometimes the focus of these experiences is on community service or on learning more in a general way about a culture different than one's own and about oneself (e.g., Anderson & Guest, 1994). This includes learning about what a particular community thinks about specific educational issues (Narode, Rennie-Hill, & Peterson, 1994). At other times, the focus is more directly on the classroom implications of these experiences (e.g., the skills of translating cultural knowledge into culturally relevant pedagogy, the skills of relating to culturally different parents). Other varieties of community experience in teacher education have emphasized developing prospective teachers' abilities to engage their pupils in service learning or community action projects.

Despite the potential benefits for prospective teachers in community work, the use of community experiences in teacher education programs does not have an unproblematic history. For example, in the National Teacher Corps, where community work was a central feature of the preparation of teachers, the community experiences were considered by some to be the most varied, difficult, and controversial aspects of the program. Often, adequate time was not provided to complete these experiences, and cooperating teachers sometimes exerted pressures on interns to keep them in the classroom and away from the outside community (Corwin, 1973).

Overview of the Case Study

This chapter presents one example of a program that provides community field experiences to prospective teachers with the goal of developing greater cultural sensitivity and intercultural teaching competence. We describe the nature of community field experiences in this program, the opportunities that they provide for learning about and from community cultures, and the reported impact of the experiences on prospective teachers and program graduates. The program, the Urban Education Program of the Associated Colleges of the Midwest, was examined as part of a

5-year study of exemplary programs funded by the U.S. Department of Education (OERI) and the National Center for Research on Teacher Learning (NCRTL) at Michigan State University (Melnick & Zeichner, 1994).

NCRTL researchers visited the site twice (5 days per visit) to observe various program activities, to interview program staff and students, and to interview graduates of the program. We also collected and examined internal program documents, such as course syllabi and annual reports.

Community Field Experiences in an Urban Setting: The Urban Education Program of the Associated Colleges of the Midwest

The Urban Education Program (UEP) of the Associated Colleges of the Midwest (ACM) is a consortium in its 32nd year of operation. Currently located in a former convent in the Edgewater Community on the North Side of Chicago, the UEP draws students from 15 member colleges: Beloit, Carleton, Coe, Colorado, Cornell, Grinnell, Knox, Lake Forest, Lawrence, Macalester, Monmouth, Ripon, St. Olaf, Gustavus Adolphus, and Ohio Wesleyan.

The UEP's student teaching program focuses on the twofold task of teaching and learning in urban environments. It is committed to the belief that "teaching requires both technical skills and serious reflection . . . [and is thus] concerned with helping teachers develop consciousness of their involvements on several levels in the field of education" (*Director's Report*, 1988, p. 3).[1] The program is based on five assumptions:

1. Education is a political act.
2. Teaching is empowerment of others as well as of the self.
3. Teaching is a collaborative act.
4. Teaching is critical, creative, and integrative thinking.
5. Education is enhanced by cultural pluralism.

The program's learning opportunities for teacher candidates are arranged with the intention of enabling them to develop the following skills and attitudes:

1. Consciousness of oneself (beliefs, perspectives, patterns of behavior, coping and learning styles)

2. Attentiveness to others (observation and listening skills, encouragement skills, analytic and diagnostic skills)
3. Ability to collaborate and communicate with others (students, colleagues, administrators, parents)
4. Resourcefulness (use of ideas from a wide range of sources)
5. Openness to change (self-evaluation and use of feedback from others)
6. Understanding of the cultural dimensions of people's lives and their impact on learning
7. Ability to analyze educational systems and their impact on the learning environment
8. Sense of self-confidence balanced with the courage to question oneself and the content of schooling (*Director's Report*, 1988, p. 3)

The student teaching program includes full-time work in schools, small and large group seminars twice weekly in late afternoons and evenings, and several community experiences. In addition, the students live together in the former convent in an environment that is designed to foster feelings of collaboration and support (AERA, 1994: SR).[2] For students who come from these small midwestern colleges, the experience in Chicago is one of total immersion in a setting that differs radically from the one they are used to on their home campuses.

Program Opportunities to Learn From and About Community

The faculty of the UEP program believe that "community" informs everything they do. Not surprising, given the program's longevity, they have developed a vast network of resources—exemplary speakers from the various ethnic and political communities (e.g., African American folktale and storytellers, civil rights activists), liaisons with several community-based institutions (e.g., the Mexican Fine Arts Center Museum, the People's Music School, the Puerto Rican Cultural Center), and shopkeepers in various ethnic neighborhoods (e.g., the Italian community in the Taylor Street area). As one faculty member describes the role of community resources:

> UEP takes as central to its beliefs that every one of us is a resource. We don't have to have experts but people who have

> lived experience and are willing to share that lived experience. . . . A rich urban center like Chicago permits faculty to draw upon a variety of ethnic communities as sites for our students to go into the community and to learn about the lives of their students . . . when they're not in school, where they play, where they shop, where their parents work. (AERA, 1994: DI)

The program has three explicit purposes for learning from community experiences:

1. To make prospective teachers comfortable in the communities where they are teaching
2. To help prospective teachers realize what community resources are available
3. To help prospective teachers acquire images of students' daily lives that prospective teachers can build on in their teaching

Another faculty member explained the rationale in vivid terms:

> We don't want our teachers to have the rabbit hutch syndrome, where the bunny jumps out in the morning, jumps into her car, drives to school, teaches, jumps back in her car, goes home and slams the rabbit door shut. We want them to be comfortable, to feel that this is part of the whole experience of their teaching. We want them taking the subway, or EL, or bus, to walk around . . . there, and not come home before the sun comes down. (AERA, 1994: SR)

The program primarily employs two kinds of activities for student teachers to help them make connections between schools and communities. One activity is "neighborhood walks," or guided community explorations. Prior to student teaching, teams of four or five students, sometimes but not always with a faculty member or local community member, visit a number of Chicago's ethnic neighborhoods—the Polish, Mexican, Italian, Southeast Asian, South Asian, Russian-Ukrainian, Puerto Rican, and Greek areas of the city. These guided explorations are designed to "help students meet people, to learn about them and issues important to them, and to learn ways of using the city as a resource for learning about the world" (*Director's Report,* 1988, p. 6). As one faculty member described the experience:

> They're like "adult treasure hunts." . . . Students are asked to look for things, ask people questions, go into certain stores, talk with people, come back and teach each other about the different communities they've visited, to interest others in investigating that community, and to increase their cultural knowledge and experience. (AERA, 1994: SR)

In preparation for the neighborhood walks, students make a "concept map" of expectations for their experiences in a particular neighborhood. They also study city maps to get their bearing with respect to the community's location, and they plan their explorations with maps of Chicago's public transportation system. Faculty provide students with guidelines for "close observation" to help them see themselves as "walking anthropologists" rather than tourists. Finally, students are given sheets with tasks specific to the particular neighborhood they will explore.

Although some of the tasks vary according to the neighborhood, students generally are asked to collect artifacts; make notes of the physical conditions of houses, businesses, and public areas; and visit shops, public buildings such as libraries or community centers, and places of worship. If there are murals in the community, students are asked to notice what buildings these are painted on, who the subjects in the mural are, and what is striking about the artwork. In all neighborhoods, the students are asked to talk with residents and shopkeepers to seek to better understand how people live, what they do, and what they value. In addition, students are asked to inquire about scheduled cultural events such as lectures, plays, festivals, exhibits, and community center activities. This information is added to a class calendar that is used to encourage students to participate in a variety of activities on a weekly basis.

Three kinds of structured activities are used to help students make sense and meaning of the neighborhood walks. The first requires them to talk through their experiences in a large group setting. Using the task sheet, they show the artifacts they gathered, tell about their observations as well as the conversations they had with residents, and give answers to questions for specific information they were directed to find. This format enables students to talk about both what they were asked to focus on and the personal impact of the experience.

The second activity involves reflective journal writing. Students are asked to return to their preexploration "concept maps" and revise or expand what they expected to find in light of what they discovered. Generally used to help students make sense of their own learning throughout the student teaching program, the journals often capture the power of students' community experiences in vivid terms. As one student wrote after a neighborhood walk: "It's incredible to be walking down Broadway and suddenly round a corner and step into another country" (interview with DI, March 1995). The journals are used by the faculty to answer students' questions, clarify students' misconceptions, and push students' thinking on cultural and community issues.

The third activity involves peer teaching. Following a series of neighborhood walks conducted in teams, students work with their respective peers who visited a particular neighborhood to plan 20-minute lessons to be taught in a "learning center" format to their other classmates. Each team sets up a learning center displaying their artifacts and the materials they create, such as drawings from observations, and they teach each other about their insights from the experience. In addition to helping them share cultural information, the students use these opportunities to stimulate interest in their peers to visit more neighborhoods and to model activities that can be used in the classrooms where they student teach.

The model of the neighborhood walks in the various ethnic communities is extended to the neighborhoods in which students are placed. At the beginning of their student teaching, they are instructed to explore their school community with a small group of their peers who are placed in the same community. They are expected to do the same "close observations" and cultural information gathering that they did in the neighborhood walks, and they also are expected to reflect on the experience in their journals and teach the other students in the program about their respective school communities. At the end of the first week of student teaching, they also are required to develop profiles of the student body, the faculty, and the school. This profile includes, for example, attendance and drop-out patterns, the racial composition of students and faculty, the range of student achievement patterns, school policies, characteristics of the school's physical plant, and materials and resources available for faculty and students. The completed profiles are reproduced by the faculty so that all students in the program can use them as the basis for a future seminar discussion.

A second set of activities to help student teachers make connections between home and school involves a two-way process of exchange with community resources. In some cases, students go out into the community to talk with people targeted for specific reasons (e.g., the director of a museum) or to do volunteer work in a community program (e.g., the Puerto Rican Cultural Center). In other cases, people from the community come to the program for informal and formal interactions with students. The least formal are *forums*, which are one-hour talks, usually given by people who are not teachers (e.g., social workers, lawyers, storytellers, parents). Afterward, students have opportunities to interact with the speakers in casual conversations during a reception. *Workshops* provide another way for students to interact with community people and usually involve 2 or more hours of hands-on experiences (e.g., poetry, learning and teaching styles). The most formal activities are *seminars*, intensive 3- to 4-hour discussions in which "students struggle with the curriculum and teaching strategies presented to them from different perspectives" (AERA, 1994: SR). Each cohort's seminars are based upon their stated interests and perceived needs. During the year of our data collection, seminars focused on such areas as the Great Books, Adlerian psychology, discipline, and gangs.

The kinds of activities briefly described above, in conjunction with the living arrangements in the convent, provide a rich array of learning opportunities for student teachers from small midwestern colleges to learn about the urban environment that forms some of the context of the lives of the children in their placement sites. The UEP faculty, however, are careful in the ways they design and structure the activities. Before sending students on walks to a particular ethnic neighborhood, for example, faculty will have completed the walk themselves and can anticipate the kind of experience the students will have. Such planning enables them to develop the task sheets that will make the students' experiences as rich as possible. The key to making these experiences truly transformative for students, in one faculty member's view, is what she calls "mediation":

> Mediation—expectation, consistency, and a lot of time for development and support. . . . We tell a lot of stories, we have people read things. But the most important thing is the experience and being there to talk about it after it's happened. (AERA, 1994: SR)

In her view, the obstacles to success are insufficient mediation:

> If we don't mediate enough, if we don't talk to our students, we don't realize they are having a personal crisis. We see stereotypes being reinforced, we see the creation of new stereotypes. We see them become afraid. The most difficult aspect of this is culture shock. When they first arrive in the program, their first experience is wonderful. It's all new, it's exciting. "I love it all." And then

> when they realize that their values are very different, they reject, become angry, have emotional crises. And the point is to get beyond that. There is usually some kind of blow up, or some kind of personal turning point out of which we either have transformation, or we have withdrawal. What we really, really try to do is to always be there. (AERA, 1994: SR)

In group interviews with program graduates and individual interviews with student teachers enrolled during the periods of our data collection, it was clear that the majority were profoundly affected by their community experiences. Many experienced personal turning points that signaled transformation, while a small number withdrew emotionally or intellectually.

Impact on UEP Students

In several group interviews, each made up of four or five program graduates currently teaching in the Chicago area, there was universal agreement about the power of their community experiences and confirmation of the support and mediation that the program faculty sought to provide. One teacher described her naïveté on entering student teaching and called her experiences in the program "sensitizing":

> I didn't know a lot about the Latino community. In fact, I remember [a faculty member in a seminar] using the word [Latino], and I was thinking, what is this word? The night before I did my student teaching, I ran out to a used book store and bought a book that I read furiously the first night called, *What Is It to Be Puerto Rican?* . . . I didn't even really racially know what it was. It's embarrassing, but I think I'm not unusual. My whole experience, I had never encountered that. I lived in southern Ohio most of my life. . . . I started working in an adult high school in the evenings . . . volunteering at least once a week and got very much involved . . . with Mexican adults who were coming to learn English or get their high school diploma. I got into that because the people in the program here knew the woman who was the director of that program. . . . So all those things made a difference. (I, 1.14.93, p. 3)[3]

Another teacher in this interview echoed the importance of sensitizing typical student teachers:

> I felt very much a sense of necessity to sensitize us, to where we had come from and how that comes into play with the students that we're working [with]. . . . If we were going to teach in Chicago, we weren't going to be teaching, for the most part, people who were like us. . . . We did that by doing the neighborhood walks, a variety of things. . . . I find that other people who haven't had that kind of sensitizing experience, . . . they have no sense that it even exists, that even comes into play with what's happening with the dynamics of a classroom or a school as a whole. . . . The school where I am, we have a very ethnically and racially diverse group of teachers, teaching largely about 96% Mexican-American students. And for the most part, I would say, on the part of the teachers, there is something different about who they are and who the students are. . . . And trying themselves to sensitize themselves to what it is the students are coming from. There's just no sense that that even matters, or that it should even be a big part of the picture. (I, 1.14.93, p. 6)

All of the teachers in this interview agreed that their preparation and behavior were different than those of their colleagues. As one said:

> I sincerely doubt many of the teachers [in my school] have walked through the neighborhood. . . . There's definitely a difference, there's no question in my mind. . . . You know an Urban Education person when you see them or meet them. You do. (I, 1.14.93, p. 6)

Another teacher then said, "It's that brand on our foreheads. . . . All the exposure and interest that we've seen exemplified in the program then becomes something that we can continue in our own lives" (I, 1.14.93, p. 12). One teacher, who had graduated 16 years before, in another group interview summed up the impact of her community experiences on her thinking and teaching this way: "They really pulled out of me a new way of thinking. And it's really impacted the way I teach today. And that was in 1977" (III, 1.13.93, p. 3).

Although the recollections of the current student teachers were more immediate in time, they reflected many of the same ideas the graduates of the program expressed. The neighborhood walks were viewed as valuable to them, both for learning about the ethnic communities and for establishing levels of comfort with diversity. One student said simply, "I feel brave now, because I have that under my belt" (J, 1.11.93, p. 15). Another student's views about her growing awareness were typical of her cohort:

> They took us to ethnic neighborhoods, and I had no idea that Chicago even had that. . . . Just to be aware that there's such a sense of community within cultures like that . . . knowing that they have such a sense of community that they are bringing into the school. Maybe that has a lot to do with why kids interact the way they do in class. (S, 12.2.93, p. 17)

Meeting the program's expectations for not becoming "rabbit hutch teachers" had an impact on students and graduates alike. One student said: "We're not being led out on tours every day and in tour buses and looking out windows" (A, 12.2.93, p. 6). One graduate's graphic memories illustrated the meaning that getting to school had for her:

> I think they taught me how to look at things in different ways. . . . When you put it on a personal level, I walked to school . . . in not very nice neighborhoods, and I was harassed. . . . It was scary at first . . . but it also gave me the whole outlook of how racism starts. These people that would see me on the street would know that I had blonde hair, and blue eyes, and that I was white, and they would call me "Caucasian," and [say], "What are you doing in our neighborhood?" And "I bet you think you're really smart." . . . [S]ome people really tried to scare me. Like, they would come right up to me and yell at me . . . but after they got used to me being around, there would be some people within the streets that would say, "Hey, she's the teacher. Leave her alone!" . . . I dealt with a lot of things like that, to not feeling real safe where I was, and yet, in the program, they taught us to turn that around and expose yourself and, when you feel safe with another person, and then to grow from that and go out to find more things. . . . I just felt like they're always trying to get us to learn more about things, if not necessarily another culture, just a different way of looking at things. (I, 1.14.93, pp. 7-8)

Learning to think differently about others was a pervasive theme in most of our interviews, but graduates and current students also mentioned the importance of a number of community resources, both institutions they visited or worked in, and a wide variety of people who came to the program for forums, workshops, and seminars.

Although the current students spoke mostly of the impact of their growing awareness in relation to their own lives, the graduates talked about connections to the lives of their students. One graduate captured the impact of coming to understand the meaning of people as resources in relation to her teaching:

> I remember learning how to draw upon the histories of the students and their own stories, and that everybody has a story. . . . That kind of helped me to think about what do these students bring . . . what are the strengths that they are bringing? They may not be bringing these skills of reading and writing in their native language or in their second language, but what do they have and what are their experiences? And that goes along with the empowerment of students. . . . Because when you . . . say to students, "Gee, you have a lot to offer, and let's hear about it," people begin to feel good about themselves, and of course we all know that . . . you can learn a lot better when you have higher self-esteem. (III, 1.13.93, pp. 13-14)

In addition to the structured community experiences and seminars, living together had a tremendous impact on most of the students and graduates. For one graduate who was in the program prior to the move to the former convent where the UEP is now located, living together in apartments in the same building made the program a seamless experience:

> Here was this situation when we were all living together and sharing apartments. You'd come back after student teaching, and you have a seminar right away. You'd be talking about your experience of the day and getting feedback and crying, or whatever was the case. And it was just like constantly around you. And then you'd eat dinner together, and continue to talk and then on the weekends, it would be like these educational opportunities. It was non-stop. . . . Energy, I felt like I was bouncing all the time. It was wonderful. . . . Here you were . . . as an emerging teacher being educated and not even really knowing it. (III, 1.12.93, p. 17)

For most of the current students, living together in the former convent was a similar experience:

> We became a real community first here, so we then could go out and take those same ideas and try to get them to work in our classrooms. . . . This has been phenomenal. We all come home and sit around the kitchen table and just spill out our days and compare stories and ask for help and ask for advice. Plus I feel like I've gotten . . . insight into so many other different experiences. . . . I feel like I've learned so much more than just what's gone on in my own school, just from talking to my friends here. (S, 12.2.93, p. 15)

The foregoing suggests that, for most of the current and former student teachers, the UEP accomplished many of their goals for the community experiences they provided.

But a few students were not as positive in some of their commentaries. Living together, for instance, did not create a sense of community for them. A few talked of personality conflicts, calling them "understandable" but "unfortunate," and two commented on the lack of privacy. Two other students talked about how early efforts at team building and collaboration broke down.

Not everyone found the neighborhood walks as meaningful or relevant as they might have wished. One student said that she enjoyed the ethnic communities, but her school was not in an ethnic neighborhood:

> Not that there's any safe way for them to take us to the projects or take us to the South Side or things like that. But that all becomes kind of mysterious. . . . Some of the more undesirable places to go, we didn't see. And I think that would be helpful. . . . Especially if that's where your kids are coming from. Maybe talking, maybe having us each take our school and really see where the kids come from . . . and finding out things about their communities. . . . We didn't do that formally. (S, 12.2.93, pp. 17-18)

And not everyone found various seminars as useful as they might have wanted. After one generally well-received seminar on the symbols and organization of gangs led by a high school teacher, one student had a mixed reaction:

> The gangs [seminar] was very interesting I thought. But it was very much information dissemination, the banking idea of Freire, and so we got our deposits and then we checked out. . . . I think it would have been interesting maybe if we could have had, this is

> ideal, but have a gang member there. What do you think about this? What are the solutions? Why do you want to be a gang member? Then play around with it and tussle with those ideas. OK, so elementary school teachers, what do you do to prevent gang membership or to foster an environment that really includes all members of the community, and so we don't need gang membership? And in high school, how do you plan to deal with the situation? I think that would have been very exciting and dynamic, and really working with the real world, other than, oh, we get all this information. Great, so when I go in the alley, I know what these codes are, but I'm not leaving with much more than that. . . . It was a lot of, well, Bloom's lower levels of thinking. (E, 12.2.93, pp. 9-10)

And, finally, despite the efforts of the UEP faculty and peer cohorts, one student seemed to have tacitly rejected efforts to transform her thinking:

> In high school [in Ohio], I think when I was there it was 80% black and 20% white. And being a white female, it was kind of intimidating to be in that kind of a situation. . . . In fact, they closed the school, I think about three or four years ago, because they said it was becoming too black or something like that. . . . (B, 11.30.93, p. 1)
>
> The only contact I really had with the black community was maybe two blacks that were in the honors classes and the rest of them I just passed in the hallway. So, but they have mace fights and I would see drug deals going on in the high school. . . . At [my college] it's an incredibly diverse school. We have about . . . 10 to 20% international students. . . . I'll be working in a public school, basically because the money's better there. But it won't be in Chicago, I know that. I probably will end up going to a community like I grew up in. Just because I feel comfortable with that. You know, even though I feel I would be able to work with those kinds of children, because I've learned a lot this semester. . . . I think my growth since high school in terms of dealing with different kinds of people has grown because of the multiple experiences I've had . . . during this experience. (B, 11.30.93, pp. 5-6)

Although this student claims to have grown, it is clear that she has withdrawn from her earlier intentions to teach in an urban setting. As the

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foregoing reports of impacts on students' and graduates' thinking show, this student's views were idiosyncratic among our subjects. Yet we are reminded of the faculty member who talked about the importance of mediation, saying: "We either have transformation, or we have withdrawal."

In summary, the UEP faculty's goals for students' learning from community experiences were largely achieved by the students and graduates we interviewed. Taken together, their reflections on the neighborhood walks, seminars, and other community activities suggest that they acquired increased levels of comfort with communities different than their own and learned much about available community resources. Although the current students understandably showed evidence of only beginning awareness of building on community in their teaching, the graduates provided evidence of the program's impact on their thinking about connecting their students' in- and out-of-school lives in their teaching. Across both students and graduates we interviewed, the most powerful impact of the community experiences seems to have been learning to think differently about persons and communities different than their own.

Although the majority of interviews indicated that current and former students were affected positively by the program, two of the instances of criticism noted above warrant attention. Living together in close quarters for an intensive period of time worked well for most of the students interviewed, but such arrangements may demand a special kind of mediation for those who are uncomfortable in such settings. And learning about the communities of poor students of color may require much more intervention of the faculty than the program currently provides. Although the explorations of ethnic neighborhoods clearly had an important and lasting impact, the characteristics of poorer communities may challenge typical student teachers beyond the capabilities the program is currently designed to help them acquire in powerful and meaningful ways.

Conclusion

The case discussed in this chapter illuminates certain aspects of the role of community field experiences in preparing teachers for cultural diversity as well as some of the pitfalls. Although the literature in multicultural education includes many instances in which school and community experiences strengthen and reinforce stereotypes and low expectations for students and their families, the community experiences in this program seem to result in both personal and professional changes that offer the potential for more culturally relevant teaching. Although we did not observe the graduates of the program in their classrooms, there still is some evidence from our interviews that some of these changes persist beyond the student teaching semester.

Data from our overall study suggest that one of the most powerful changes that often occurs as a result of a semester-long community immersion experience in the American Indian Reservation Project at the University of Indiana—Bloomington (Zeichner & Melnick, in press) is the greater knowledge of self that emerges from being a minority over a period of time in a culturally different community. The semester-long experience of living, teaching, and working in another culture seems to offer the most advantages for gaining self- and cultural knowledge. Here, friendships with community members have time to develop, and access to community life has time to emerge naturally. When community experiences are linked directly to communities where student teachers teach, the student teachers are able to gain insights about the lives of their own pupils and their families, insights that can help them adapt their teaching and learn how to teach in a more culturally relevant way.

Although the short-term community experiences and contact with community members associated with the Urban Education Program are valuable in many respects in remedying the self- and cultural ignorance of prospective teachers (if properly prepared for, structured, and supported), it is very difficult in these brief experiences to gain the trust and respect of community members and an insider's perspective on community life that evolves from this trust and respect. These brief community experiences prior to student teaching do not ensure that efforts will be made during student teaching and beyond to be community-conscious teachers.

Many of the schools associated with the community experiences we studied in our overall project did not offer student teachers models of high expectations for pupils or the incorporation of cultural content into the classroom. This has reinforced for us the inadequacy of school-based experiences alone in culturally different communities in developing cultural sensitivity and intercultural teaching competence.

The preparation of teacher education students for community experiences, clear guidelines for the experiences, as well as careful structure provided for reflection about these experiences all seem necessary to enhance the value of community field experiences for prospective teachers. Our findings underscore the importance of teacher education programs employing community members in both the preparation for and instruction during community field experiences. Teacher education institutions as a whole lack faculty who have the knowledge and ability to implement community field experiences on their own. The new partnerships between schools and universities that are receiving so much attention today in the PDS literature are not sufficient for developing the cultural competence needed by teachers unless these partnerships also extend to the communities in which the schools exist.

Community field experiences are not a panacea for the failure of teacher education programs to prepare teachers for cultural diversity. They are difficult to initiate and sustain and have as little status as school-based experiences within teacher education institutions. They are also often resisted by schools that are unresponsive to the communities in which they exist. Finally, we were not able to locate through an extensive literature search and several years of informal contact across the United States a community immersion experience for prospective teachers in a poor African American community. Although the claims of staff in all the programs we studied about the generalizability of the cultural competence learned by prospective teachers beyond the type of student teaching site may be true to some extent, there is still a great need to extend the idea of community immersion experience to poor African American communities.

Given the scope of the task before us today in preparing teachers to teach many students who have backgrounds and life experiences different than their own, it is critical for the teacher education community to further explore ways to make community experiences more integral parts of the preparation of all teachers. Only by "shifting the center of gravity" (Cuban, 1969) can we help prospective teachers truly learn to build bridges between home and school for everyone's children.

Notes

1. *Director's Reports*, from the Urban Education Program, submitted to the Associated Colleges of the Midwest in Chicago, are unpublished.

2. Such references denote attribution for comments made during an interactive symposium titled "The Role of the Community Field Experiences in Preparing Teachers for Cross-Cultural Teaching" at the 1994 AERA annual meeting. Participants from the UEP were Demetria Iazetto and Sharon Russell.

3. The information provided with these quotations indicates whether from a group (shown with roman numerals) or personal (shown with letters) interview, the date, and the page number in the interview transcripts.

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4 Designing Professional Development Learning Communities

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ABSTRACT

Professional development of all practitioners in education has long been fragmented and disconnected from those places where educators practice their craft. Teacher induction/mentoring programs, although offering glimmers of hope toward the improvement of the current state of professional development, are consistent with the traditional mind-set of a linear, discontinuous set of professional growth experiences. In this chapter, we suggest that educators challenge traditional mind-sets of professional development with the lens of systems thinking and practice. We further suggest that educators engage in a design process wherein learning communities become the context for a career-long professional life cycle.

Examining the Landscape of Professional Development

The landscape of professional development for educators has been somewhat rocky during the decades of the 1980s and 1990s. This rocky landscape extends to the broader system of education and, as Cremin (1990) has suggested, "the system is in a crisis" (p. 29). There has been increasing pressure on the system from political, social, and economic arenas. The focus of this pressure has often targeted the development and improvement of practice among teachers and other practitioners who are engaged in the processes of schooling.

This chapter explores new directions for the professional development of educators. Included is the integration of systems thinking and practice in creating a new understanding of professional development. These new directions suggest designing learning communities within which all educators come together with a shared purpose: the education of America's youth. Before we examine these new directions, however, we generally review the current landscape of professional development and provide an explicit example of teacher induction/mentoring as background for the suggested design-oriented new directions.

The Current Landscape of Professional Development: Voices of Discontent

Charting new directions for professional development of educators requires a deep understanding of where professional development currently is as well as what forces drive the need for change. These forces can be understood to some extent through the voices of those engaged in and affected by professional development. Resounding loudest are the voices of national, state, and local policymakers; constituents of the school community such as parents and students; and those indigenous to the educational institutions.

National and state policymakers have voiced their discontent with the system of education in general and, with that, have implied discontent with the professional development of educators. The reports from the 1980s such as *A Nation at Risk* (National Commission on Excellence in Education, 1983) brought national attention to needed reform in education. The passage of the Educate America Act reinforced the federal government's presence in education. The evolving systems of certification of educators based on established standards (National Board for Professional Teaching Standards, 1994) is yet another indication that strengthening professional development has come to the forefront of the educational agenda.

Some of the most striking voices of discontent reflect the inequities of the very social and economic fabric of our society. As Cremin (1990) has suggested, we might "call to mind the discontent felt by those who perceive themselves as outside the system, so to speak, and are therefore resistant to any kind of schooling sponsored by the so-called establishment" (p. 10). In a nation in which, historically, calls for reform have suggested a reaffirmation of the espoused purpose of schools and schooling to prepare all citizens to participate in a democratic society (Aikin, 1942; Dewey, 1916; Glickman, Lunsford, & Szuminski, 1995), we are painfully reminded of those children who are not participants in the ideal. Kozol (1991) has reminded us that "we had not been listening much to children in these recent years of 'summit conferences' on education, of severe reports and ominous prescriptions. The voices of children, frankly, had been missing from the whole discussion" (p. 5). The voices of those children speak of poverty, despair, and lost hope, and it is perhaps these voices that are the most urgent as we look to the development of educators for the 21st century.

Educators, and those studying the educational system, have long painted a grim picture of the status of the preparation and continuing development of educators. Lortie (1975) spoke of the lack of status and poor enculturation in the profession for new teachers. Sarason, Davidson, and Blatt (1986) addressed the unstudied problem of teacher preparation. The voices, particularly those referencing professional development prior to the 1990s, called for a departure from fragmented, short-term, one-shot, quick-fix staff development activities. As Lieberman and Miller (1991) pointed out in the preface to a second edition of a comprehensive collection on staff development: "In 1979, when the first edition of this book was published, it was one of a few books that spoke of the need to look at staff development not as an isolated set of workshops but as a means of working with teachers over time" (p. vii).

The most accurate characterization of the current state of professional development among educators is that of fragmentation. Teacher preparation, and indeed all educator preparation programs, operate largely in isolation from the contexts in which future educators will practice their craft (Goodlad, 1990; Sarason, 1993). Educators often are prepared in isolation from one another and carry that isolation into the school arena. As Sarason (1993) commented: "*There is no overlap whatsoever between preparatory programs for teachers and administrators. The two programs differ not only in substance (courses) but in the teaching faculty*" (p. 251, italics in original). The same circumstances are true in most educator preparation/credentialing programs for elementary/secondary, special education/general education, and counselors and school psychologists.

Not only does this fragmentation occur interprofessionally across disciplines, but there is also fragmentation along the professional development continuum from preservice to inservice. For example, preservice preparation of teachers is often largely removed from the context in which experienced professionals practice their craft. Teacher induction and mentoring is yet another example of professional development that, although perhaps offering benefit to participants, further perpetuates the fragmentation of the professional development continuum. Examining the various stages or phases of the professional development life cycle enables us to see more clearly the linear and discontinuous nature of professional growth as practitioners prepare for and practice their craft. In the next section, we examine one phase of professional development, teacher induction and mentoring, as an exemplar of focused, but fragmented, efforts to strengthen professional development.

Teacher Induction and Mentoring: An Example Phenomenon

For our purposes here, the implementation of induction and mentoring programs is illustrative of a specific change called for in schools, although it is, in large measure, disconnected from other professional development efforts. Following a description of the purposes of teacher induction and mentoring programs and the current knowledge gleaned from the teacher induction and mentoring literature, we identify current limitations of mentoring programs and then describe a design for embedding the induction and mentoring of educators in a larger and broader professional development system.

Purposes of Induction and Mentoring Programs. For the past 15 years, teacher induction and mentoring has been thrust into the school reform agenda by educational leaders and policy makers with purposes of easing the entry of beginning teachers into teaching, retaining them in the profession, and improving their teaching. As typically conceptualized, teacher induction/teacher mentor programs entail veteran mentor teachers providing assistance to new teachers as they make a transition from novice to experienced professional. Having veteran teachers "mentor" new teachers addresses two serious problems in teaching—the well-established abrupt and unsupported entry of novices in the field and the difficulty of keeping good, experienced teachers in the classroom. The provision of mentor teachers is considered an important improvement over the more typical "sink or swim" experience of many beginning teachers in the United States (Huling-Austin, 1990).

The term *mentor* has been associated with proposed shifts in teachers' professional relationships and with altered teacher roles in schools. Mentoring has been used as a principal component of state-initiated teacher incentive programs (Hart, 1989; Wagner, 1985), university-based teacher preparation programs (Huling-Austin, 1988; Odell, 1986a, 1992), and local programs of teacher induction and professional development (Feiman-Nemser & Parker, 1992). Moreover, the "mentor phenomenon" is related to larger aspirations about improving teaching by transforming professional relations. Toward this end, Little (1990) draws a distinction between social support that puts newcomers at ease and professional support that advances knowledge and practice. From this perspective, the promise of mentoring lies not in its contribution to novices' emotional well-being or survival but in its capacity to foster an inquiring stance toward teaching and a commitment to developing shared standards for judging good practice.

Current Knowledge About Induction and Mentoring. Drawing from business and adult development literature, there is no gainsaying that the importance of mentoring is well established. In business, mentors as sponsors and guides are of value to those business protégés who are interested in career advancement. The literature pertaining to mentoring adults in applied education settings is not voluminous, but it is confirmatory. For example, Bova and Phillips (1984) found that protégés in university settings learn risk-taking behaviors, communication skills, political skills, and specific professional skills from their university mentors.

Likewise, in school settings, when the mentoring of new teachers is effective, the stated purposes of induction and mentoring programs are generally realized. Specifically, the well-known emotional, social, and procedural concerns of new teachers are ameliorated (Odell, 1986b), the retention rate of new teachers is increased (Odell & Ferraro, 1992), and the professional development of new teachers toward reflective and self-reliant teaching is enhanced (Huling-Austin, 1990).

What is also clear in the literature, however, is that these benefits do not emerge simply from assigning a mentor teacher, no matter how well selected and prepared, to a new teacher. Importantly, if the mentor teacher who is to provide assistance is asked also to formally evaluate the new teacher, the mentor relationship becomes nonsupportive (Fox & Singletary, 1986). Likewise, if mentor teachers are not given sufficient time to discuss the categories of support that are needed at any given point by the new teacher (and these do change dramatically across time and individual new teachers; Odell, 1986b), then the mentoring support may be inappropriate. Furthermore, if mentor teachers are not given the opportunity to study their own practice of mentoring and to develop effective strategies of mentoring, the impact of induction will be considerably compromised (Feiman-Nemser, 1992). If the mentor teacher and the new teacher differ markedly in terms of grade level, content area, or teaching style and ideology, then the desired bond between mentor and new teacher protégé may not be well formed (Borko, 1986; Huffman & Leak, 1986).

Current Limitations in Mentoring Programs. Often pressed to move quickly following passage of legislated mandates for new-teacher induction, the implementation of induction and mentoring programs often constitutes a direct and substantial challenge to some of the most powerfully established norms of teaching and to established authority relations in schools. On that basis alone, such initiatives are especially susceptible to the problem of vanishing effects. For example, the current structure of schools does not easily allow veteran teachers time in their day to mentor a beginning teacher. Teachers judge the worth of mentors in part by the amount of time they visibly devote to the work of mentoring. Visibility is diminished when mentors' work is reserved to time outside the instructional day.

A second limitation is highlighted by various implementation studies that point out the ways in which mentoring is a departure from business as usual. Mentor roles turn out to be an innovation of considerable complexity (Little, 1990) that demands joint work (at least between the mentor and new teacher) in school environments where many designated mentors have spent years working alone rather than working in groups or workshop-type settings. Nicholson (1984) identifies factors that influence the adjustment that individuals make to new roles including the dispositions acquired through past socialization, differences in work demands, and arrangements that govern work in a new position. In the current structure of schools, little attention has been given to such demands when induction and mentoring programs are initiated. Rather, it is the expectation that all other conventions of the workplace remain intact while the innovation (in this case the induction/mentoring program) is initiated.

It has been suggested that this induction/mentoring innovation is "professional development," yet it is perhaps the very characterization of induction and mentoring as an innovation that signals the disconnected nature of such programs. Participants in an induction/mentoring relationship are clearly positioned on specific points within the professional development life cycle. Contemporary conceptualizations of professional development have shaped the emergence of teacher induction and mentoring programs. We are suggesting that new directions for professional development must begin with challenging those mind-sets that are grounded in more traditional philosophies and practices.

Contrasting Mind-Sets of Professional Development

Recent and emerging research (Banathy, 1991, 1992; Fullan & Miles, 1992; Miller Nelson & Reigeluth, 1995; Sparks, 1994) suggests that the more traditional views of education and professional development must be scrutinized under the lens of systems thinking and practice. In addition, there are those who argue for connecting more authentically the preparation of practitioners to the context of their profession (Fullan, 1991; Goodlad, 1990; Sarason, 1993). Moreover, there is emerging support for the development of community in place of individualism and fragmentation (Benne, 1990; Hill, 1985; Land & Jarman, 1992). Further explication of the contrast between traditional and systemic perspectives of professional development can be found in Table 4.1. Given these contrasting perspectives, how

TABLE 4.1 Contrast of Traditional and Systemic Perspectives of Professional Development

Traditional	*Systemic*
• Fragmented approach to professional development: Preservice, induction, inservice follow a linear and often disconnected continuum (interrelation of each not a priority)	• Holistic approach to professional development: Preservice, induction, inservice, renewal are viewed as *dynamic* rather than a *continuum*
• Attention to existing settings and paradigms (past to present orientation of change—planning for a future)	• Attention to creating new settings and paradigms (future to present orientation of change—designing the future)
• Focus on preparing individual as practitioner within limited domain of profession (i.e., administration, teacher education, counselor education, and so on)	• Focus on building professional community of inquiring practitioners with holistic sense of community as domain of profession
• Deals with the form of the problem in education and professional development	• Deals with the substance of the problem(s) in education and professional development
• Preparation begins with theory or history or research findings or pedagogical technique	• Preparation begins with concrete issues of classroom and school life: the practical, inevitable, action-requiring issues
• Preparation is contextualized to specific professional role (i.e., classroom in school, administrator, social services, and so on)	• Preparation is contextually sensitive to the complexity of the real-world life educators live (all programs and services interdependent)
• No overlap between professional preparation programs such as teacher, administrator, counseling	• Overlap is intentional and designed in professional programs (i.e., teacher, administrator, counselor professional preparation)

(continued)

TABLE 4.1 Continued

Traditional	*Systemic*
• Change is driven by reform mandate, politics, accountability, or certification needs—often externally motivated	• Change is created by community as center of inquiry and critical thought—internally motivated
• Research focus is on self-interests of a profession and contributes to fragmentation and discontinuity (i.e., induction, inservice; teacher education, administrator preparation)	• Research focus honors and contributes to the community as a profession of educators (i.e., research recognizes the interdependent nature of educators in their context)
• Intraprofessional collaboration or partnerships (i.e., within individual practitioner areas and formal education)	• Interprofessional and intraprofessional collaboration (i.e., within and across practitioner domains in educational service professions)
• Professional consciousness of educator as worker who teaches (administers, counsels, and so on) according to well-defined proscriptions for practice	• Professional consciousness of educator as inquiring professional, inquiring into his or her own practice (disciplined inquiry as part of educator craft)
• Internship or residency generally provided at completion or later stages of preparation program with limited educative, evaluative, and real-world learning experience	• Internship or residency provided at beginning of preparation program and protracted with rigorous educative, evaluative, and real-world learning experience
• Undergraduate and graduate programs and the teaching norms of university faculty are often misaligned with those theoretically advocated for students, schools, and practitioners	• Undergraduate and graduate programs and the teaching norms of university faculty are closely aligned with those theoretically advocated for students, schools, and all practitioners

can we move from traditional mind-sets of professional development toward one embracing systemic thinking and practice? The following sections suggest possibilities for new directions.

Transcending the Existing System: Learning Professional Development as a System

Creating a Professional Development Learning Community: A Systems Design Perspective

Transcendence is "a realignment of all dimensions" (Fritz, 1989, p. 276) of the familiar. This begins with changing individual mind-sets and shifting collectively held mind-sets. Creating a new order of things first requires that we transcend existing mind-sets, that we leap out of the existing system. Neither action is easy nor without considerable investment. Each action requires critical self-examination and a disciplined inquiry into the nature of the existing systems, creating a contextual understanding that serves as a critical point of departure. Each action also requires that all stakeholders or users of the professional development system conjoin in a dynamic process for fundamental change. Systems design (Banathy, 1991; Checkland, 1981; Churchman, 1971; Reigeluth, 1993) is a dynamic process that equips us to transcend the existing system and prepare for the future.

Leaping Out of the Existing System. Leaping out of the existing system of professional development means identifying the mind-sets that govern our understanding of education, professional development's relationship to education and schooling, and what constitutes professional development. Table 4.1 presents several characteristics of a traditional mind-set in contrast to a more systemic mind-set. Mind-sets are similar to cognitive maps and the associated routines or strategies (Banathy, 1991) that we use to negotiate the professional development landscape. Once identified, we must then renegotiate individual and collectively held mind-sets, creating new images of the terrain through cognitive repositioning. Embracing systems philosophy and theory and engaging in systems thinking and practice in the professional development context enables us to create new mind-sets that begin to change the landscape not only of professional development but, more important, of education. Systems design is one example of how we can leap out of the existing mind-sets of professional development. See Table 4.2 for other "touchstones" (Jenlink, 1995) for changing mind-sets and leaping out of the existing system.

Leaping out of the existing system means changing old mind-sets and creating new future-oriented ones to replace those discarded. The connecting of practitioners and the educators of practitioners must occur at deep

TABLE 4.2 Touchstones for Changing Mind-Sets

- Self-examination and disclosure of existing mind-sets
- Systems thinking and practice in professional development
- Identifying and honoring the diverse stakeholder/user base of professionals
- Constructing a new common language
- Dialogue and design conversation
- Participate in individual and collective reflection
- Creating and sustaining a community of inquiring professionals
- Managing transitions between old and new mind-sets

substantive levels. Dialogue, critical inquiry, and reflective practice are processes for such connections. Shifting mind-sets also requires the construction of a new language while simultaneously deconstructing old languages. Perhaps the most important element of shifting mind-sets is realizing that before something new can be created, something old must be abandoned. Managing the transition between old mind-sets and new mind-sets is a crucial step in leaping out of the existing system. A systems inquiry approach to design embraces these touchstones and provides the context in which to design a new professional development system.

Systems Design. Systems design is a disciplined inquiry approach (Banathy, 1988) to creating a new future. This disciplined inquiry is guided by a grounding in systems philosophy, theory, methods, and practice as well as the notion of idealized design (Ackoff, 1981; Banathy, 1991) wherein the user-designers (i.e., practitioners and others who constitute the professions) set about to create an ideal image of what the future would be without concern for existing constraints or boundaries. A beginning point for the design is to identify the purpose for the new system. In the case of considering professional development as a "human activity system" (Checkland, 1981, p. 111), the purpose is constructed in a context of understanding professional development as part of a larger, more integrated whole and the properties that emerge as a result of this systemic and integrative perspective.

As context gives meaning and allows for understanding the purpose of a new design, likewise purpose serves to guide the evolution of the design as the detail is added to the new human activity system of professional development. Moving beyond purpose in the design, there are four additional levels of elaboration that lend to the substance and nature of the new system. These include identifying core ideals and values, specifications or characteristics of the system, functions the system will carry out, and the enabling systems for each function.

"User-Designer Based" Methodology. Often, when educational organizations experience problems or changes in context brought on by social, economic, or political forces that demand internal changes, those who administer or manage the organization seek outside assistance in the form of experts. These experts are recognized for their knowledge and ability to problem solve and design solutions to seemingly complex problems. Although this expertise is valuable in some respects, it often contributes further to the fragmentation of the system as special problems are isolated and addressed out of the context of the larger whole of the system. There are several shortfalls of a consultant (expert)-based approach to change. Consultants tend to be experts in specific areas and often are insensitive to the interrelated and interconnected nature of complex systems or their problems. Implementation or institutionalization is compromised when those who use the system (i.e., in professional development) are not actively engaged in the design or change of the system. When problems are isolated to separate areas of professional development such as preservice, induction, and inservice, and experts are identified for these specific parts, the professional growth cycle of educators tends to be construed along a linear continuum. This continuum is fragmented and distorted by our failure to recognize and honor the diversity of stakeholders/users who are the professionals that constitute the system.

A "user-designer based" approach (Ackoff, 1981; Banathy, 1991), which requires that a diverse representation of stakeholders (Jackson, 1991; Reigeluth, 1993) be engaged in the design process, offers an alternative to traditional orientations to educational change. As Banathy (1991) states:

> The notion of USER-DESIGNERs is based on the belief that systems design is most successful, it is most viable and productive, and commitments to implementing the design are most binding, when it is directed by the users of the future system rather than by outside experts. (p. 166)

Engaging all levels of professionals who are educators practicing their crafts in schools and colleges and across all professional domains requires a new mind-set for who should be involved in change. Where we have traditionally acknowledged the need for representation in change, it has tended to be a selected representation often tempered by politics and expediency. Also, where we have traditionally engaged stakeholders in limited and often contrived conversations of change, with a user-designer-based approach the involvement is authentic and recognizes diverse voices participating in conversations of change created in a medium of reflection and dialogue. We no longer assume that those who use and are in the educational system cannot participate in the design and change of the system but that they are the system they use and, therefore, must activate the gateway to changing professional development as a "*human activity system.*"

A Professional Development Learning Community Design. Figure 4.1 suggests a design of a Professional Development Learning Community (PDLC) that emerged from our contemplation of the idealized perspective of professional development as a human activity system embedded within a larger systemic context of the educational system and society. Each level in this design is an elaboration out from the purpose and is interrelated and interconnected to the design of the whole system.

The shared values of the design create a common bond and create fundamental connectedness essential to the integrity of establishing and sustaining a community system. Specifications give clarification and guidance to the evolution and operationalization of the design. As professionals conjoin to build and live in a "learning community," these specifications give texture and detail to the newly emerging human activity system. Establishing the functions this system will engage in brings to the community a level of conscious awareness of an evolving structure and order, constantly shifting in concert with changes in the broader context of the educational system. Where functions give structure and order, enabling systems give life and support to the human activity system as it carries out the various functions, connecting participants with the system and the system with the life of society.

Understanding Contexts for Professional Development and Learning. The dynamic and embedded nature of the design within various professional development contexts (see Figure 4.1) helps the user-designer to see the emerging relationships, interactions, and exchanges (Banathy, 1992) between professional development, the educational system, and its environments.

Context gives meaning to all human activity (Mishler, 1979). If we view professional development as one human activity system, then we

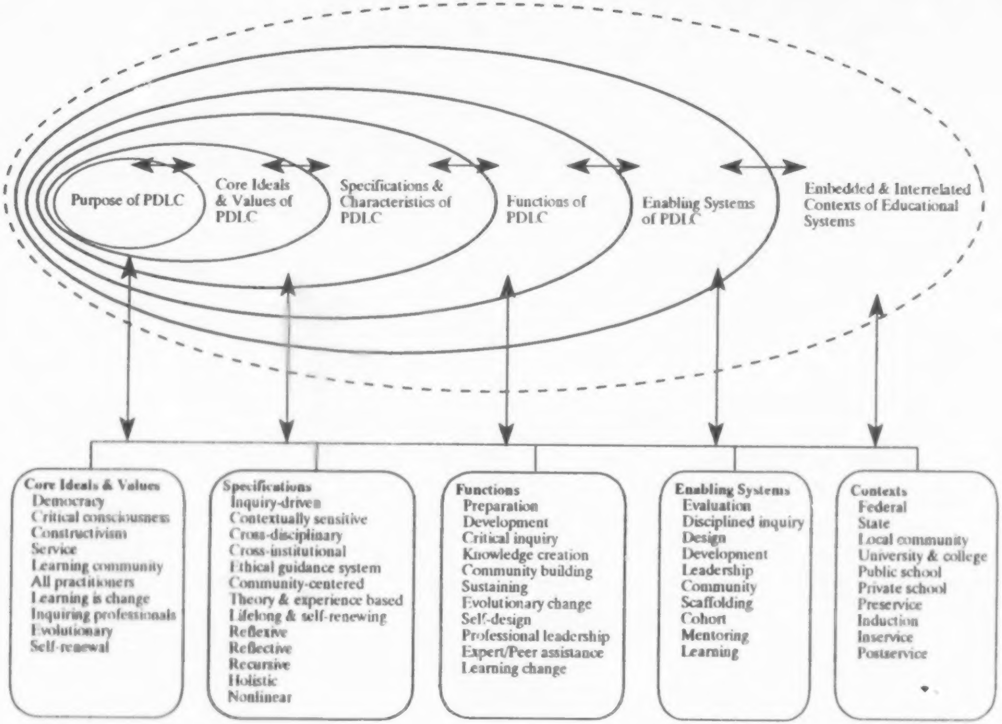
Purpose of PDLC
Core Ideals & Values of PDLC
Specifications & Characteristics of PDLC
Functions of PDLC
Enabling Systems of PDLC
Embedded & Interrelated Contexts of Educational Systems
Core Ideals & Values
Democracy
Critical consciousness
Constructivism
Service
Learning community
All practitioners
Learning is change
Inquiring professionals
Evolutionary
Self-renewal
Specifications
Inquiry-driven
Contextually sensitive
Cross-disciplinary
Cross-institutional
Ethical guidance system
Community-centered
Theory & experience based
Lifelong & self-renewing
Reflexive
Reflective
Recursive
Holistic
Nonlinear
Functions
Preparation
Development
Critical inquiry
Knowledge creation
Community building
Sustaining
Evolutionary change
Self-design
Professional leadership
Expert/Peer assistance
Learning change
Enabling Systems
Evaluation
Disciplined inquiry
Design
Development
Leadership
Community
Scaffolding
Cohort
Mentoring
Learning
Contexts
Federal
State
Local community
University & college
Public school
Private school
Preservice
Induction
Inservice
Postservice

Figure 4.1. Systems Design View of PDLC

must attend to the many contextual domains that give meaning to the lives of educators. These contexts are naturally embedded and interconnected yet they traditionally have been distanced from one another by created barriers and imposed boundaries.

For the educator within a PDLC, from a systems perspective, embedded contexts should include the traditional units of preparation such as the higher education institution inclusive of college of education, the specialized departments, the preparation programs, and the disciplines. Equally important contexts include those of public and private schooling such as community, local school systems, individual schools, classrooms, and subject areas. Each small context is nested within a larger context, each contributing to the dynamic nature of the other.

Designing new human activity systems of professional development is a time-intensive and fundamentally challenging process. It requires that user-designers be broadly representative and inclusive of the diverse voices of professional practice associated with educating children. It requires that those engaged in the design process (a) are contextually sensitive, understanding the embedded nature of professional development and education; (b) understand education as a complex system and professional development as a human activity system within this complex; (c) see the purposes and the boundaries of professional development as emerging from a coevolution with context; and (d) understand the dynamic interdependence and interconnectedness that contribute to a synergistic "wholeness" that is education. Creating synergism and "wholeness" requires transcending existing mind-sets that reinforce the disconnectedness of collectives and embracing a new mind-set of community.

From Collectives to Learning Communities

The notion of a learning community might be traced to, among others, the historical-political and psychological references to the broader concept of community. Dewey (1927), in suggesting the necessary path toward a democratic ideal, spoke of "the conditions under which the Great Society may become the Great Community" (p. 147). He went on to describe community:

> Wherever there is conjoint activity whose consequences are appreciated as good by all singular persons who take part in it, and where the realization of the good is such as to effect an

> energetic desire and effort to sustain it in being just because it is a good shared by all, there is in so far a community. . . . Associated or joint activity is a condition of the creation of community. But association itself is physical and organic, while communal life is moral, that is emotionally, intellectually, consciously sustained. (pp. 149-151)

Community goes beyond mere associated or joint activity. There is something more, something deeper that binds individuals together, a psychological sense of community. Sarason (1974) noted that

> We all experience the presence or absence of a psychological sense of community. . . . It is one of the major bases for self definition and the judging of external events. The psychological sense of community is not a mystery to the person who experiences it. It is a mystery to those who do not experience it but hunger for it. (p. 157)

The concept of community, then, is well founded in our history and tradition, both as society as a collective and within ourselves as individuals. But what of the concept of a *learning community*? What precisely constitutes a learning community?

Certainly, one can look to Dewey's description of persons acting together in moral ways. In the case of a learning community, the associated members of the group are emotionally, intellectually, and consciously connected in the pursuit of growing, changing, developing, and learning as individuals and as a group. Learning communities are about the process of change. Learning is change and, as such, is dynamic. Fullan (1993) described learning communities:

> [Learning communities] neither ignore nor attempt to dominate their environment. Rather, they learn to live with them interactively. Continuous change is built into the relationship because widespread interactions under conditions of dynamic complexity demand constant attention and movement. Change forces are seen as inevitable and essential to learning and growth. (p. 84)

Within this dynamic complexity, the forces of change may serve to threaten the connection between the individual and the group. There are pressures as learning and change, or learning as change, support the dismantling of the old structures to make way for the new. It is in the face of those pressures that the connectedness embodied within the community becomes important. There is a support, a scaffold, within the learning community that binds each member to the other and to the group as a whole. In this binding, the group becomes cohesive in emotional, intellectual, and conscious ways. The group evolves from a collective based on association to a community grounded in the morality of emotional, intellectual, and conscious pursuits. Benne (1990) saw this move from collectivity to community among humans as essential to the future of humankind:

> The most hopeful way through and beyond the desert of collectivity, social fragmentation, and impending self-inflicted doom in which we now wander is for persons thirsting for a fuller life to unite in building community within contemporary collectivities and between and among contemporary fragmentations. (p. 66)

Dewey, Sarason, and Benne have described communities. It would seem natural that schools should bring educators and students together to form learning communities. Given the predictable, teacher-dominated places that schools have historically been (Goodlad, 1984), one cannot be comfortable with the assumption that schools are learning communities.

Learning Change as a Professional Development Learning Community

The sense of community is inextricably linked to emotional, intellectual, and conscious activity. In the case of schools and schooling, this emotional, intellectual, and conscious activity is about the meaning that is constructed by students. Schools are not just for children, however; there are adult learners within those walls as well, and many of those adults are in the throes of learning change. Educators are coming together in places and spaces to immerse, distance, uncover beliefs, and ultimately improve the learning opportunities for adults and children (Lester & Onore, 1990). A community is essential to support those changes. How might a community look in the context of professional development?

Given that the traditional perspective of professional development is one of fragmentation, we are suggesting, as Benne (1990) has, that we must move beyond the bundling of practitioners as collectives to a new level of consciousness wherein those educators who touch the lives of children are connected in meaningful relationships of responsible action to form community. This community of connectedness must encompass the professionals that are now fragmented through separate programming and certification requirements. We are suggesting that classroom teachers, special education teachers, administrators, school counselors, school psychologists, speech-language professionals, and university faculty, to name a few, initially come together in cohort structures for an immersion into a PDLC. Such a structure would transcend the traditional role delineations. The cross-role feature of this cohort enables existing boundaries to soften and new relationships to emerge.

We are further suggesting not only that we cross professional lines in this community but that we span the traditional linear configuration from preservice through induction, and inservice. A PDLC is dynamic rather than linear. A cohort group would include those persons at every point in the profession who would bring their own individual perspective and contributions to the group. This learning community then would support professional development as learning, and professional development as change, in emotional, intellectual, and conscious ways. Reflection and dialogue become powerful tools for inquiry and change. Professional development becomes a lifelong endeavor supported by the learning community.

Preparing Our Profession for Change

Creating a design for professional development requires that members of our profession engage in serious and purposeful dialogue. It will require that we transform the disparate and disconnected bundles of professionals from across the professional development landscape into a learning community. Connecting schools and universities is only one important step in the journey. Reducing boundaries between preparation programs for teachers, administrators, special educators, and other educators is a larger and critical step in creating community. In addition, we must connect traditional educational preparation programs and the myriad social services preparation programs that play a critical role in helping to educate children. Perhaps the greatest challenge in designing a PDLC is in letting go of old familiar patterns and embracing new ideals.

The process of designing a PDLC must entail (a) uncovering those underlying assumptions held by individuals, (b) immersion into the experiences that expand our horizons, and (c) the reflection, inquiry, and dialogue that shape our practice as educators. We would like to share our reflections on the process as we came together as colleagues and educators in a 7-month odyssey of thinking and designing a future state of professional development. We have decided to share in our individual voices rather than our community voice.

Reflections of Process: Shared Voices

Katie's Voice

As I reflect back over the last 7 months of inquiry and dialogue about a design for professional development, images tumble forth to form a collage of this experience. Possibly the most powerful image is one of the energy and synergy that filled Sandra's office during our times together. We taped our meetings, and it was enlightening to listen to these tapes and reread the transcripts. They left a trail of how our thoughts evolved over the period of time. I do believe that we were a collective coming into those sessions, but we had developed a sense of community as we neared closure.

Patrick brought a perspective of many years as an administrator but one whose current mind-set is filled with the power and promise of systemic change. Sandra brought a history and wealth of knowledge of induction and mentoring, and she is currently living and breathing the reality of collaborative relationships with public schools. I brought the perspective grounded in language and literacy but am faced with the pressures of a first-year faculty member in a teacher preparation program in a small university. Given these disparate histories and realities, I found the process of looking to the past yet designing the future exciting and exhilarating. We were sharing our thoughts on the process at a conference, and the question was raised: "How did you find the time?" Forming a community takes time, but the time is there and the rewards worthwhile.

Sandra's Voice

In retrospect, the process of building a learning community, albeit small, among the three of us was exhilarating and educative. The activity of developing ideas together was powerful; three heads were clearly better than one in broadening each of our perspectives and knowledge bases. In addition, a strong collegial relationship developed among us as we each "bought in" to the process and shared responsibility. It also was stimulating and educative to "unpack" meaning and become much more clear about terminology and ideas. Forcing ourselves beyond the simple and superficial to the specific, complex, and deeper meanings of the language we use was particularly challenging and helpful to our defining Professional Development Learning Communities.

Having worked, studied, researched, and written for many years in the areas of teacher development, teacher induction, and teacher mentoring, I have come to recognize the shortcoming of examining and advocating teacher induction and mentoring programs separate from the complex surrounding context. The process of thinking, studying, and writing about a design for professional development with Patrick and Katie has generated a vision for me in which induction and mentoring have become an important part of a much more systemic and dynamic approach to facilitating the growth and development of all participants in a learning community. Although time-intensive, how can we afford not to take the time for such development?

Patrick's Voice

In reflection, moving beyond ourselves—our own mind-sets about professional development—was challenging and liberating. Connecting through dialogue provided the three of us an opportunity to share, individually and collectively, in design conversation, which created much more than a systems perspective of professional development. Engaging in the dialogue and design processes enabled us to create ourselves as a community with a common purpose and shared values about professional development. When we considered the dynamic and complex nature of professional development as a human activity system, it became apparent that changing a system was first about changing ourselves. It was particularly powerful for me to experience the evolution of systems thinking and the emergence of a systems language in the context of professional development.

My experiences over the past 6 years in working with educational systems design and systemic change in schools have afforded me important opportunities to connect with many levels of professional development. Each school I've worked with was connected to a university through collaborative efforts in one way or another. Through these experiences, I have come to understand how the existing system contributes to the perpetuation of complex problems. Working with Sandra and Katie over the last several months in articulating a design for a PDLC has afforded each of us time and space to begin to examine the complexity of the problems associated with professional development. Stepping out of our old "familiar mind-sets," although often difficult and painful, affords the opportunity for learning communities in the destiny of professional development and the institution of education in the United States.

Next Steps

The next steps are so simple yet so complex. A design for a Professional Development Learning Community begins with forming a community. Where teachers are prepared apart from administrators and counselors, where preservice is isolated from induction and inservice, where schools and universities are separated by dissimilar cultures, then the educators in that collective must come together to form community. The process will be unique to each community because it will be shaped by the dialogue and actions that flow from their own design. Designing the future of professional development has the potential to shape the future of our children. It requires, however, the purpose and synergy of community.

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Contexts:
Reflections and Implications

Paul C. Paese

In the overview chapter for this section, I made the statement that the most pressing issue for the field experience component in teacher education is no longer structure but the context of where and with whom these experiences take place. It is apparent that the field experience component must be more than accumulating clock hours in schools and even developing teaching skills of interns if future teachers are truly going to be prepared to teach America's children.

Relationships Among Economic Diversity and Context of Student Teaching Placements and Educational Attitudes and Performance of Preservice Teachers

Guyton and Wesche in Chapter 1 explored the relationship of the school context not only to student teachers' perceptions/attitudes but also to performing in field experiences. The authors make the point that the majority of the students in teacher education programs are Anglo and have a desire only to be placed in Anglo schools similar to those in their own background. Will placements of these teachers in schools with diverse populations affect perceptions, attitudes, and performance? Zeichner (1990) has stated that the context influences teacher socialization, which, of course, is affected by teacher-pupil ratio, material resources, authority, school values, and so on.

The authors, in their discussion of results, conclude that the atmosphere and morale of the school, along with the support of the cooperating teacher(s), are just as important as school background in determining the success of the intern during the preservice experience. This conclusion only verifies what we have all believed over the years: that the cooperating teacher is the common denominator in making or breaking a field experience placement. How many times have we supervised a student teacher in a superior-rated school but found that the cooperating teacher was not effective or supportive in working with the student teacher? Then, as a result of this placement, the student teacher exits with low performance ratings and low teacher efficacy.

Self-selection placements by student teachers in urban settings were rated higher in performance than those in low SES schools when compared with practicum students who did not self-select placements in urban settings. This finding supports Haberman's (1987) findings on self-selection. Students who are rated high in teaching performance have higher perceptions of personal and general teacher efficacy, which in turn effects a more student-centered style of teaching. It is obvious that student teachers with higher efficacy have had more positive experiences in schools.

The importance of the authors' work is that the findings not only validate previous research but also support our myths concerning the need for supportive environments in which our interns can practice, regardless of the school's SES.

Learning to Teach in Cross-Cultural Settings: The Significance of Personal Relations

Valli (Chapter 2) in her opening remarks discusses the cultural mismatch of the current teaching force and the cultural diversity of students within our schools. It goes without saying that merely adding a course on multiculturalism or integrating that component within the professional sequence will not equip future teachers with the attitudes, skills, and so on needed to provide children with adequate educational experiences.

In her chapter, Valli discusses an ethnographic study based on constructivism. Student teachers in the study did not self-select themselves into diverse settings. The author should be commended for the exhausting work of sifting through interviews, field notes, and so on in developing the categories interns and teacher educators must be aware of for successful cross-cultural experiences (i.e., apprehension and misconceptions, establishing trusting relations, making personal revelations, evoking student voice, coping with confrontations, and enacting responsive curriculum).

Finally, the value of this study is that it demonstrates that student teachers can be successful in cross-cultural settings if the professionals the interns work with in the schools help them confront their fears and assist them in creating classrooms where both respect and trust are developed. Valli makes an excellent point when she states that if trusting relations are absent in cross-cultural settings, the experience will not be successful, no matter how sound the subject matter and pedagogical knowledge are. This study reaffirms the need to establish personal relations with culturally diverse students if the teacher is to communicate high expectations and develop culturally responsive strategies with students (Zeichner, 1993).

The Role of Community Field Experiences in Preparing Teachers for Cultural Diversity

Chapter 3 focuses on adding community to our field-based components, especially student teaching. As Zeichner and Melnick suggest, dialogue on the importance of tying community to teacher education perspective is not new (Cuban, 1969; Flowers, Patterson, Stratemeyer, & Lindsey, 1948). The authors suggest that when student teachers work within the community during field experience components (i.e., student teaching), they get to see their students not as isolated individuals but as members of total family and community environments—which is the value of experiencing community. Diversity should be viewed as a resource, not a problem.

The authors provide an example of a program that has the goal of developing greater cultural sensitivity and intercultural teaching competence. The Urban Education Program is a unique program that cannot be replicated by teacher education programs in all institutions of higher education. But many of the basic goals, findings, and conclusions from programs discussed by the authors can easily be integrated within the field experience components. Programs and experiences that involve student interns within community can result in both personal and professional changes. This leads to far more culturally relevant teaching but also begins to break down stereotypes and low expectations that many future teachers have about students and their families from diverse backgrounds. A critical point the authors make is that immersion in diverse schools and their communities, by itself, will not totally prepare teachers for teaching effectively to cultural diversity. For this to happen, university partnerships must be extended beyond the schools and into the communities. As a result, interns must receive support not only from teachers in those schools but from key community members as well when preparing to teach students from diverse populations.

New Directions for Professional Development: Designing Professional Development Learning Communities

Chapter 4, the final chapter, by Jenlink, Kinnucan-Welsch, and Odell, suggests that the professional development of practitioners has been and is fragmented and disconnected. Every phase in teacher education (preservice to inservice) is disjointed. The authors discuss and question why teachers are prepared apart from counselors, and counselors apart from administrators. Why has the preparation of preservice teachers been separate from the context of the schools, where practicing professionals work? Even induction/mentoring, which has received many accolades over the past 5 to 7 years, is an example of fragmentation, because the individuals involved in this phase are positioned on specific points of the professional development cycle.

The authors put themselves out on a limb in suggesting the total redesign of professional development by challenging the mind-sets that have been grounded in more traditional philosophies and practice. The process offered for designing Professional Development Learning Communities is a dynamic one that will require a major leap in thinking by educators. Some of the changes that the authors suggest have been taking place over the last few years in the professional development school movement. We have begun to abandon old mind-sets and create new programs, but then, compared with what the authors have suggested, we have a long way to go.

Implications and Conclusions

The school sites and professionals with whom student interns work, at this point in time, are the most critical pieces of the field experience component. One goal during the concrete field experience (student teaching) is for interns to enter the induction phase of teaching with both high personal teacher efficacy and general teacher efficacy.

The research clearly appears to advocate that future teachers during student teaching be placed in diverse settings with supportive professionals. These types of experiences should help student teachers analyze the effect of curriculum and instruction on student learning, especially if the professionals working with the students encourage them to reflect on and access different contexts and to draw on their coursework to develop ways to help children establish connections with school knowledge. Because our future teaching force will be mainly Anglo, I feel that self-selection should not be the only criteria for placement in diverse settings. A future study is needed to compare the effect of professional support in diverse schools on student teachers who do and do not self-select themselves into those diverse placements.

It is very important that student interns are now being exposed to community in their field experience components. As I stated earlier in this section, this recently has become the case, as seen in the professional development school movement. This also can be seen in the work of Len Kaplan at Wayne State University, who under the auspices of ATE organized a National Congress on Teacher Education that involves an in-depth look at the preparation of teachers not only by teacher educators at the university level but by public schools, communities, government agencies, and so on. I also concur with Professor Mahan at Indiana University, who has stated in several of his talks at ATE conferences I have attended, that the majority of our student teachers just go to their schools for the day and then go back home after school. These interns never really become involved in the community, which prevents them from experiencing the total picture. Students involved in Dr. Mahan's immersion program and in programs that I direct at Southwest Texas State University, where students are placed in Mexico, New Zealand, and England, are more involved as student teachers within a community in a foreign country than their counterparts in our local placements.

I believe that Jenlink et al. have given us the impetus for needed change in the formation of professional development communities. We must not get trapped into thinking that the field experience component is just a point along the professional development continuum. I hope we will prepare our future teachers to believe that differences are created, maintained, and changed by their interactions, and thus that difference is socially constructed. Belief in socially constructed differences among children has implications for teaching and learning. Teachers must be prepared to teach all the children of America. What we do in the near future will shape the development and future of our children. We must not lose sight of one important point: University/college teacher preparation programs do not all have the same opportunities to provide future teachers experiences in diverse settings. Still, we must provide as many diverse experiences as possible so that these future teachers will have an appreciation of difference. Even if a teacher works in a school and a classroom where everyone is ethnically the same, there are still differences within that class. Thus, a valuing of diversity in the context of field experiences is crucial.

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DIVISION II

Processes for Successful Field Experiences

PROCESSES: OVERVIEW AND FRAMEWORK

Gary P. DeBolt

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The development of teachers is a complex combination of experiences, interactions, and learnings that enable preservice novices to move into the roles of highly skilled, effective teachers. Effective teachers for tomorrow's schools must be more than content experts. They must understand the developmental stages and needs of their individual students; work with a variety of adults both in the schools and the community at large; command strategies for problem identification and solution; and care for people, things, and ideas. As Brown (1993) states:

> [We must go] beyond basic skills and include enhanced abilities to think critically and creatively; to reason carefully; to inquire systematically into any important matter; to analyze, synthesize, and evaluate information and arguments; and to communicate effectively to a variety of audiences in a variety of forms. (p. xiii)

These attributes are desirable both for our future teachers and for their students. The question raised here is this: How can we best develop such characteristics in those preparing to be teachers?

Elements of Teacher Development

This division of *Teacher Education Yearbook IV* deals with processes involved in preparing to become a teacher. The chapters included will examine (a) approaches to early field experiences in teacher preparation programs, (b) role perceptions involved in the student teacher-cooperating teacher-university supervisor triad, and (c) positive mentoring of a first-year teacher. Before presenting these chapters, it should be helpful to consider a theoretical framework with which to conceptualize the entire process and subprocesses. The entire process might be thought of as teacher development, that is, the transition from being a student of teaching to being an effective teacher. Field experiences, student teaching, and the first years of teaching might be thought of as being subprocesses within teacher development or steps along the way in one's lifelong journey to become the best teacher possible.

Mager (1992) argued that a broad perspective of what it means to become a teacher is needed. Becoming a teacher

> might . . . be thought of as the continuous experience of an individual through which an image of self-as-teacher is formed and refined, and during which knowledge, skills, and values

> appropriate to the work of teaching, as it is to be practiced in a particular context, are acquired and used. (p. 6)

Mager based his thinking, at least in part, on the work of Fuller and Bown (1975), Medley (1983), and Soar, Medley, and Coker (1983). He proposed three concepts for consideration in the development of an individual's image of "self-as-teacher," as follows:

- Teacher *competence* is "the body of knowledge, skills, and values appropriate to the work of teaching" (p. 16).
- Teacher *performance* is "the expression of the new teacher's competence through the enactment of the tasks of teaching in a particular context. It is the challenge of using what is known, what skills have been acquired, and what values have been formed, in the particular classroom and school in which one is hired to teach. Context bears heavily on performance" (p. 17).
- Teacher *effectiveness* is "the accomplishment of intended outcomes as a result of performance. Most typically, such outcomes are related to student learning and student behavior. . . . [T]eacher effectiveness is always context bound—expressed in a particular, real setting" (pp. 17-18).

These three concepts can be very useful in considering the next three chapters. In each chapter, questions are raised about the subjects (or teachers in development) in terms of their competence, performance, and effectiveness.

Three Research Reports

What follows are three research reports that address different processes along the continuum that is the process of becoming a teacher. Metcalf and Kahlich present a meta-analysis to study and compare the effects of several forms of on-campus experiences for teacher education students. They encourage us to carefully examine research-based evaluation evidence of all types of preservice experiences before "we jump on the bandwagon" for increased field-based experience. Their analysis raises interesting questions about how decisions are made in teacher education curricular matters.

In the last of the three chapters, Enz, Freeman, and Wallin present a research report of a large-scale study of the perceptions of the roles and responsibilities of the university supervisor as viewed by the parties involved in the student teaching triad—student teacher, cooperating teacher, and university supervisor. This study reinforces the call by Guyton and McIntyre (1990) for explicit, shared understanding of the roles of all parties involved in the student teaching experience. Enz et al. also raise important questions about the need for training of both college-based supervisors and school-based cooperating teachers.

Ponticell and Zepeda share a case study of a positive mentoring experience that helps a novice teacher focus his conceptualization of teaching and learning via problem-solving strategies used by a skillful mentor. This study points out our need to conceptualize the process of becoming a teacher as one that is ongoing. It does not end with the attainment of a degree, certification, or passing score on some assessment instrument. There exists a strong need to support new teachers and their struggle with the challenges of teaching in a specific context.

Each of these research reports raises questions about how best to help developing teachers obtain the highest degrees of *competence, performance,* and *effectiveness.* These are critically important questions.

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5

Laboratory Experiences as Transition From Campus to Field

Kim K. Metcalf

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ABSTRACT

Although field-based experiences represent an increasing proportion of the teacher preparation curriculum, a variety of factors have prompted a search for methods to help students make the transition from campus classroom to field settings. The current study sought to expand on earlier reviews of on-campus laboratory experiences by statistically examining the effects of such experiences in teacher education. Data were obtained from 60 studies that met a priori criteria for inclusion. Using aggregation techniques suggested by Rosenthal and others, descriptive data analyses were conducted. The results provide strong evidence that on-campus laboratory experiences produce consistent and positive results in terms of teacher affect, knowledge, and behavior. These effects are substantially stronger for inservice than for preservice teachers but are significant for both. A surprising result is that there appears to be no consistent diminution over time in the changes produced by the laboratory experiences. On-campus laboratory experiences appear to offer much promise as a supplement to current teacher education practices.

A large and growing proportion of the preservice teacher education curriculum is devoted to experiences in field settings (McIntyre, 1983). From 1968 to 1983, the field-based portion of typical teacher education programs grew by nearly 50% (see Heald, 1983; Johnson, 1968). In fact, substantial increases in field-based experience were noted by almost half of responding institutions as among the most significant programmatic changes they had made in recent years (Hawley, Austin, & Goldman, 1988).

Although intuitively appealing and highly valued by students, there are at least three serious problems associated with current field-intensive teacher preparation. First, substantial evidence indicates that field experiences, especially extended field experiences, may, in fact, negatively affect student teachers' attitudes, knowledge, and classroom practice (e.g., Cruickshank & Metcalf, 1990; Evertson, Hawley, & Zlotnik, 1989; Metcalf, 1991). Furthermore, it appears that the more time preservice teachers spend in field placements, the more negative the effects. Thus, teacher education students are increasingly involved in more field-based experiences of greater duration when the effects of the experiences at best are marginal and, more likely, are negative. Second, requirements for more field-based experiences of longer duration often have resulted in saturation of field placements and overwhelming supervisory loads (Guyton & McIntyre, 1990). Teacher educators find it increasingly difficult to locate, maintain, and oversee a sufficient number of desirable field placements for their students. For many preservice teachers, this leads to placement in a classroom with one or more other preservice teachers that restricts or precludes anything more than observational activities and frequently leads to resentment on the part of the cooperating teacher (Feiman-Nemser & Buchmann, 1986). Sadly, as more classroom teachers feel overburdened with the responsibility for multiple preservice teachers, more of them decline to work with these students, and still fewer classroom placements are available. Third, at a time when teacher preparation is expected to increase teachers' experiences with and understanding of diverse student populations, many teacher education institutions cannot effectively provide direct experiences of this type (McCollum, 1986; Metcalf & Wilson, 1994). Preservice teachers read and hear lectures about diversity, but seldom are they involved in experiences that allow them to observe, experience, or interact professionally with diverse student populations.

For these and other reasons, efforts are currently under way to identify and develop alternative experiences for teacher preparation that can serve to narrow the gap between didactic on-campus coursework and extensive field-based experiences. Case-based instruction and interactive computer simulations are timely examples of such experiences intended to promote application of theoretical principles to "real" but controlled situations. Many have suggested, however, that laboratory experiences, such as microteaching, minicourses, or protocols, also offer promise as alternatives to field-based experiences (e.g., Berliner, 1985; Cruickshank, 1984; Evertson, 1990). Many of these experiences were widely used during the 1960s and 1970s but have come to be less used as field experiences have increased (McIntyre, 1991). Several reviewers have attempted to draw conclusions about the efficacy of various forms of laboratory experience (e.g., Copeland, 1982; Cruickshank & Metcalf, 1990; MacLeod, 1987). Among other things, reviewers have concluded that laboratory experiences are effective in producing desirable short-term change in teacher behavior and that teachers typically feel positive about participation in these experiences, but that changes in teacher behavior produced in laboratory settings seldom are transferred into natural classroom practice.

Although informative, these reviewers have based their conclusions on what Rosenthal (1991) calls "vote counting" of the statistical significance of the results of the studies they include, assuming that nonsignificant results indicate a lack of effectiveness. In recent years, this practice has been enhanced through the use of meta-analytic techniques that allow the investigator to aggregate the results of multiple studies in a more objective and powerful way (Hedges & Olkin, 1985; Rosenthal, 1991). The current investigation attempts to expand upon earlier reviews by applying meta-analytic techniques to study and compare the effects of several common forms of laboratory or on-campus experiences that might serve as alternatives or supplements to some field-based experiences.

To this end, the current study investigated the following broad research question and more specific subquestions:

> Across on-campus experiences and various dependent and independent variables, what is the effectiveness of these experiences?
>
> a. Are there differences in the effect of laboratory experiences between inservice and preservice teachers/participants?
> b. Are there differences in the effect of laboratory experiences when the participants work with natural pupils or peers?
> c. Is the effect of laboratory experiences influenced by the context in which the dependent variable is evaluated (e.g., on-campus laboratory versus natural classroom)?
> d. Are there differences in the effect of laboratory experiences on affect, behavior, and knowledge?

Procedures

As noted, the current study sought to examine objectively the aggregated results of studies on laboratory experiences in teacher education. A laboratory experience was considered any activity in which preservice or inservice teachers were engaged in the controlled study of educationally significant concepts, practices, or phenomena. The context in which the experience occurred (e.g., on campus or in natural classrooms) was not considered. The experience, however, must have directly allowed the participant to engage in observation, manipulation, and/or practice within a deliberately controlled context that included critical analysis of the activity.

Included in the current study were eight basic forms of laboratory experience: (a) microteaching (Allen & Ryan, 1969); (b) minicourses (Borg, 1972, and others); (c) protocol materials (Smith, Cohen, & Pearl, 1969); (d)

Reflective Teaching (Cruickshank, Kennedy, Williams, Holton, & Fay, 1980); (e) written, media-based, and computer-based simulations (e.g., Kersh, 1962); (f) role-playing; (g) simple peer teaching; and (h) observation of video and audio recordings. Although currently popular and believed to be a promising alternative to field-based experiences, case-based instruction was not included in the current study due to a lack of studies of its effectiveness.

Data Collection

Data collection was conducted primarily through the use of established databases for educational research. Principal sources were the Educational Resources and Information Center (ERIC), Education Index, and Psychological Abstracts. In conducting a series of five searches, the following terms or identifiers evolved and were used: *microteaching, reflective teaching, minicourses, protocols, simulations, simulators, role-playing, peer teaching, laboratory, training, laboratory training, computer-based instruction, recordings, videotape recordings, audio recordings, observation,* and *laboratory experience(s).* In addition, every attempt was made to access studies cited in secondary sources that were *not* identified in data-based searches but that had been screened by experts in the field (e.g., paper presentations at national conferences, large-scale technical reports). It was determined that the results of studies for which original reports could not be located would not be included. Citations located by this process were further screened and were to include only those that reported the results of controlled study of one or more of the laboratory experiences. This screening provided a pool of 261 studies.

Studies in this pool were examined, and the results of each study were included if the following conditions were met: (a) the report included sufficient numeric data to allow computation of one or more standardized effect sizes; (b) the effect of a given laboratory experience was compared with the effect of some nonlaboratory treatment (e.g., didactic instruction-only, field-based treatment, or some combination thereof); and (c) detailed information was provided regarding the sample and sample size, level of the subjects, length of treatment, form of measurement of the dependent variable(s), learners used in the study (when applicable), context of the setting in which the dependent variable(s) was (were) assessed, and time from the end of treatment to time of measurement. The resulting pool consisted of 60 study reports providing 83 pairwise comparisons.[1]

It should be noted that of these 83 comparisons, 15 represent pre-post treatment comparisons for a single group of subjects. Although including

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these studies presents the potential for problematic interpretation of results, three factors justify their inclusion. First, examination of study effects indicated that few of the dependent variables under study were likely to change without intervention. Nontreatment control groups across studies seldom evidenced any gain in the dependent variables. Second, a large portion of the research on some laboratory methods relied on single group designs (particularly minicourses and protocol materials). To allow examination of their effects, it was necessary to use single group studies. Third, comparison of mean pooled effect sizes for these studies with between groups studies revealed no substantial difference (between group $M = .6964$, within group $M = .7121$).

Coding of Study Information

Each pairwise comparison was coded separately using a standardized recording form developed for this study. The form includes a complete bibliographic reference and an assigned study code. Information can be recorded for 32 aspects of the study and specific pairwise comparison. Of primary interest to the current study, the following factors were operationally defined and coded as described below.

Subject Level. Studies were coded to examine potential differences in effect between preservice teachers (those who were involved in the experience as a part of their formal professional training prior to certification) and inservice teachers (practicing teachers involved in graduate study or professional development activities after initial certification).

Course Type. Each study was coded based on the type of course or workshop in which the laboratory experience was being applied. Four categorizations were used: (a) general methods, (b) subject area methods, (c) educational psychology, and (d) other (e.g., professional development activity in a school or school district).

Learner Type. It was hypothesized from earlier reviews that studies that engaged participants with natural, school-age pupils would be more effective than those that did not. For example, microteaching or minicourses can be and are conducted using peers as learners or school-age children as learners. Learner type was coded into one of three categories: (a) none (e.g., audiotape observation or simulations that did not directly involve participants with learners of any type), (b) peers (e.g., role-playing, peer teaching, or microteaching in which participants taught or worked with peers who served as learners), or (c) natural (i.e., studies in which participants worked directly with school-age pupils in the laboratory experience).

Context of Measurement. Based upon earlier reviews of research suggesting that desirable traits or behaviors developed in laboratory experiences do not transfer to use in natural settings, each study was coded based upon the setting or context in which the dependent variable was measured (in spite of the learner type). Studies of affect or knowledge typically used written tests or instruments and were coded as a written test. Beyond this, four categorizations were used: (a) *laboratory-peers* included studies in which the dependent variable was measured in a laboratory setting with peers serving as learners or other participants (e.g., parents in role-plays); (b) *laboratory-pupils* included studies in which the dependent variable was measured in a laboratory setting with school-age pupils serving as learners; (c) *field-contrived* included studies in which the dependent variable was measured in a field setting with natural pupils, but one that was deliberately contrived for the study (e.g., small group rather than whole class lessons were taught by the participants); and (d) *field-natural* included studies in which the dependent variable was measured in a natural classroom setting with no simplification or manipulation of the environment (e.g., during student teaching or other field placement).

Dependent Variable Type. Studies were coded as to the type of dependent variable studied and were categorized into three types: affect, knowledge, or behavior. Included under affect were studies that investigated participants' attitudes (e.g., about students of diversity, teaching as a profession, reflection), anxiety about teaching or student teaching, or professional confidence. Knowledge included studies of teachers' ability to analyze or explain educational concepts or phenomena, acquisition of educational, pedagogical, or subject area knowledge, or ability to reflect meaningfully on teaching and learning. Behavior included studies of teachers' pedagogical behavior (e.g., ability to provide desirable and effective instruction).

Time From Treatment to Measurement. Again, it was hypothesized from earlier reviews that the effects of laboratory experiences would diminish substantially over time. Thus, each study was coded as to the time that elapsed between the end of treatment (e.g., the laboratory experience) and the measurement of the dependent variable. Six levels were used: (a) 1-2 weeks, (b) 2-6 weeks, (c) 6-12 weeks, (d) 12-18 weeks, (e) 18-52 weeks, and (f) more than one year.

Computation of Effect Sizes

Standardized effect sizes were calculated for each pairwise, laboratory to nonlaboratory comparison. For example, Winitsky and Arends (1991) compared the effects of both microteaching and videotaped observation with field experience (each of two laboratory methods compared with a control condition) on preservice teachers' instructional behavior, affect, and knowledge (three dependent variables). Thus, this study yielded six pairwise comparisons of laboratory methods (microteaching or videotape observation with control treatment) across each of the three dependent variables. In addition, several reports provided results of more than one study (e.g., Gliessman & Pugh, 1978). Thus, the number of effect sizes is greater than the number of individual citations.

In several studies, it also was necessary to aggregate the results of multiple measures of a single dependent variable using techniques suggested by Rosenthal (1991). For example, Borg (1972) examined the effects of minicourse participation on 10 dimensions of teachers' instructional behavior. Separate tests of difference were computed and reported for each dimension; however, no single, omnibus test result was reported. The results of the 10 separate tests were aggregated by transforming each result to Z using the probability of the result, computing mean of these Zs, establishing the probability associated with this Z, and transforming this result to t, and then to g. Thus, when multiple but related measures were reported for a single variable type (behavior, affect, or knowledge), they were aggregated and analyzed as a single pooled effect size.

Mean pooled standardized effect size (gamma) was computed as suggested by Hedges, Shymansky, and Woodworth (1989). Whenever possible, gamma was calculated as

$$\begin{aligned} g = (M_{\text{treatment}} - M_{\text{control}}) \;/\; ((\mathrm{SD}_{\text{treatment}} * \mathrm{N}_{\text{treatment}}) \\ + (\mathrm{SD}_{\text{control}} * \mathrm{N}_{\text{control}})) \;/\; (\mathrm{N}_{\text{treatment}} + \mathrm{N}_{\text{control}}) \end{aligned}$$

In instances in which means and standard deviations were not provided, gamma was calculated using t or F values (Hedges & Olkin, 1985). Furthermore, each effect size was adjusted using Hedges's (1982) adjustment factor:

$$J = 1 - 3 / (4 * N - 1)$$

Pooled adjusted effect size (ES), thus, was computed as

$$ES = g * J$$

Three studies reported significant effects and sample size but did not present either means and standard deviations or the numeric results of inferential statistics (Cruickshank & Broadbent, 1969; Emmer, 1970; Vlcek, 1966). In these instances, minimum significant values of *t* were established based upon sample size, and this minimum *t*-value was transformed to gamma and adjusted. Thus, these effect sizes are likely to be conservatively biased. No studies were found that reported nonsignificant differences without presenting sufficient numeric data to allow computation of pooled effect size.

In addition, each pooled adjusted effect size was computed as Z using procedures suggested by Rosenthal (1991) to allow determination of statistical significance of the effect and to allow aggregation of effect sizes across studies. The current analysis is primarily descriptive. In instances in which pairwise comparisons of effect size were possible and useful, however, the following formula was used and the corresponding probability of the result determined:

$$Z_{diff} = (Z_1 - Z_2) / \sqrt{2}$$

Analyses and Results

The procedures described above resulted in a data set consisting of 83 pooled adjusted effect sizes across 60 studies. Effect size data were examined by aggregating data across laboratory experiences. Mean adjustment factor (J) across the studies was .97. A surprise result was that control and treatment group sizes were highly similar across the studies with the control group being somewhat larger than the treatment group ($X_t = 25.97$, $X_c = 26.64$).

The results indicate that laboratory experiences are largely and significantly effective in producing desirable effects on teachers' behavior, knowledge acquisition, and affect. Of the 83 effect sizes, 77 favored laboratory treatment over a control treatment. Furthermore, the magnitude of these

TABLE 5.1 Aggregated Effect Size Results

Overall statistics	Mean adjusted pooled effect size = .70, SD = .76, ($N = 83$), 95% confidence interval = .5132 to .8268 Mean $Z = 2.03$, $p = .022$ Mean effect size adjustment = .97 Mean treatment group $N = 25.97$ Mean control group $N = 26.64$	
By teacher level		
Preservice	($N = 67$)	Mean adjusted pooled effect size = .59, SD = .6489, $Z = 1.72$, $p = .043$
Inservice	($N = 16$)	Mean adjusted pooled effect size = 1.16, SD = .7625, $Z = 3.36$, $p = .001$
By learner type		
None	($N = 25$)	Mean adjusted pooled effect size = .90, SD = .8619, $Z = 2.43$, $p = .008$
Peers	($N = 25$)	Mean adjusted pooled effect size = .50, SD = .4964, $Z = 1.63$, $p = .051$
Natural	($N = 33$)	Mean adjusted pooled effect size = .68, SD = .6686, $Z = 2.01$, $p = .022$
By dependent variable type		
Affect	($N = 15$)	Mean adjusted pooled effect size = .53, SD = .8494, $Z = 1.39$, $p = .082$
Behavior	($N = 46$)	Mean adjusted pooled effect size = .75, SD = .6765, $Z = 2.18$, $p = .015$
Knowledge	($N = 22$)	Mean adjusted pooled effect size = .71, SD = .6616, $Z = 2.18$, $p = .015$
By context of measurement		
Laboratory-peers	($N = 12$)	Mean adjusted pooled effect size = .89, SD = .8001, $Z = 2.59$, $p = .005$
Laboratory-pupils	($N = 9$)	Mean adjusted pooled effect size = .69, SD = .3927, $Z = 2.00$, $p = .023$
Field-contrived	($N = 10$)	Mean adjusted pooled effect size = .70, SD = .4488, $Z = 1.75$, $p = .040$
Field-natural	($N = 15$)	Mean adjusted pooled effect size = .72, SD = .8528, $Z = 2.25$, $p = .012$
Written test	($N = 37$)	Mean adjusted pooled effect size = .63, SD = .7386, $Z = 1.86$, $p = .031$

(continued)

effects is relatively large. Table 5.1 presents aggregated effect size data. As can be seen, mean adjusted pooled effect size (ES) across the studies was

TABLE 5.1 Continued

By time from treatment to measurement		
1-2 weeks	(*N* = 62)	Mean adjusted pooled effect size = .73, SD = .6883, Z = 2.09, *p* = .018
2-6 weeks	(*N* = 11)	Mean adjusted pooled effect size = .43, SD = .5542, Z = 1.55, *p* = .059
6-12 weeks	(*N* = 1)	Mean adjusted pooled effect size = .39, SD not calculable, Z = 1.50, *p* = .067
12-18 weeks	(*N* = 4)	Mean adjusted pooled effect size = 1.08, SD = 1.4022, Z = 2.69, *p* = .004
18 weeks to 1 year	(*N* = 4)	Mean adjusted pooled effect size = .38, SD = .42, Z = 1.39, *p* = .082
More than 1 year	(*N* = 1)	Mean adjusted pooled effect size = 1.21, SD not calculable, Z = 3.85, *p* = .001

moderately strong (ES = .70) and significantly different than zero (Z = 2.03, *p* = .022). The 95% confidence interval (.51 to .83) suggests that the basic effect of laboratory experiences is at least moderate and potentially strong.

Effects by Teacher Level. As might be expected, a majority of the research on laboratory experiences was conducted with preservice teachers. Only 16 of 83 effect sizes are based upon research in which inservice teachers were participants. The results indicate that laboratory experiences are effective and significant for both inservice and preservice teachers (ES = 1.16 and .59, respectively). The effects are significantly stronger, however, for inservice teachers ($Z_{diff} = 5.40$, $p < .0000$), supporting conclusions drawn in earlier reviews of laboratory experience (Copeland, 1982; Metcalf, 1994). The reviewers speculated that the reason for this may lie in inservice teachers' ability to apply, in natural classrooms with school-age learners, the knowledge or behaviors learned in laboratory experiences. If this is true, then laboratory experiences that allow participants to work with natural, school-age pupils would be expected to be more effective than those using peers, those that are simulated, or those that have no learners.

Effects by Learner Type. Comparisons of effect size by learner (pupil) type reveal effect sizes to be significant for each learner type but suggest that use of natural, school-age learners may be valuable. The strongest effect is found in studies employing simulated learners or no learners, for example, in protocols, simulations, or recorded observations (.90, $p = .008$). Nearly as strong are the effects of laboratory experiences using natural learners (ES = .68, $p = .022$). Experiences using peers as learners were least powerful (ES = .50, $p = .051$), although still significant. Modified Bonferoni procedures were employed to investigate differences in effect size, but revealed no significant differences. Still, it is notable that laboratory experiences employing natural, school-age pupils tended to be more powerful than those using only peers.

Effects by Context of Measurement. Related to the magnitude of effect sizes due to learner type are differences in effect size that appear due to the context in which the dependent variable is measured. As before, a possible explanation for the greater power of laboratory experiences for inservice than preservice teachers may lie in preservice teachers' greater anxiety and reduced performance in more natural contexts that are less like the laboratory. An examination of effect sizes by context of measurement provides only limited and inconsistent support for this explanation.

Effect sizes in each context were significant. It was surprising that written tests, used in studies investigating the effects of laboratory experience on teachers' knowledge or affect, provided less powerful effect sizes than any other context (ES = .63, $p = .031$). The remaining four contexts (laboratory-peers, laboratory-pupils, field-contrived, and field-natural) represent contexts in which teacher behavior was assessed. Although not reported in Table 5.1, mean effect size for the two laboratory contexts was larger than for field contexts (ES = .80 and .70, respectively). The largest effects were reported when teacher behavior was assessed in laboratory settings with peers as learners—the most controlled, least natural context (ES = .89, $p = .005$). Of interest, however, natural field contexts evidenced the next largest effect sizes (ES = .72, $p = .012$). Nearly as large were effect sizes in contrived field settings (ES = .70) and laboratory settings with natural, school-age pupils (ES = .69). Follow-up comparisons indicated no significant differences in effect size either across the four contexts or between laboratory and field contexts.

Effects by Time From Treatment to Measurement. A frequent criticism of laboratory experiences, even by those who are advocates, has been that their effects do not last for extended periods of time (Copeland, 1982; Cruickshank & Metcalf, 1990). Effect sizes in Table 5.1, however, suggest that this criticism may be unwarranted. There emerges no clear, substantial pattern of diminution of effect size over time. In fact, the correlation between time of measurement and effect size is quite nearly zero ($r = -.02$, $p = .835$). As can be seen, the greatest number of studies measured the dependent variable within 1 to 2 weeks of the completion of treatment, and for these studies, the effect size is strong and significant (ES = .73, $p = .018$). Beyond this, no identifiable pattern of effect size over time emerges.

Effects by Dependent Variable Type. Most reviewers of research on laboratory experiences in teacher education have emphasized their effects on teacher behavior and often have concluded that the experiences are not consistently effective in promoting desirable behavioral change. The results presented in Table 5.1 indicate that this conclusion is likely to be incorrect. Laboratory experiences appear to influence teacher behavior most positively and significantly (ES = .75) and more strongly than they influence either teacher knowledge (ES = .71) or affect (ES = .53). Laboratory effects on behavior and knowledge acquisition are significant (both *ps* = .015). Effect size for teacher affect is moderate but not statistically significant ($p = .082$).

In general, laboratory experiences appear to be effective in promoting desirable and substantial changes in a variety of contexts and diverse conditions. These experiences are significantly more powerful with inservice than with preservice teachers but are highly effective with both. Teacher affect seems least influenced by participation in laboratory experiences, knowledge considerably more so, and behavior most strongly changed in desirable ways. Of interest, the context of measurement of teacher behavior does not seem to directly affect the magnitude of effect size, with on-campus contexts providing only slightly larger effect sizes than field contexts. Importantly, including in laboratory activities some experience with natural, school-age pupils seems to produce a slightly greater result, although this effect is not statistically significant.

Conclusions

The above review of research on the most common forms of laboratory experience in teacher education leads to several conclusions about the various experiences and how they may be best used. First, and across nearly all forms of laboratory experience, participants believe the experience to be positive, enjoyable, and professionally beneficial. This is among the most consistently reported finding in research on laboratory experiences. Inservice and preservice teachers equally appear to value the experiences and, as has been found with field-based experiences, often believe the experience to be beneficial in spite of research findings to the contrary.

Second, the evidence suggests that laboratory experiences can be highly effective in the preparation of teachers. Microteaching, minicourses, protocol materials, recordings, and other on-campus experiences are useful in producing substantial improvements in teachers' instructional behavior, knowledge of pedagogy, content, learners, and, to a lesser extent, affect toward teaching and learning.

Third, some intensive laboratory experiences appear to concurrently promote a variety of desirable outcomes. For example, microteaching, developed for and primarily intended to promote skill acquisition, is found also to promote teachers' ability to reflect on teaching and understanding of desirable instructional principles. To the extent this carryover effect occurs, laboratory experiences are more efficient than generally believed. In contrast to field-based experiences, which we know to promote negative or no changes in teacher behavior, affect, or understanding, some laboratory experiences may promote all three.

Fourth, laboratory experiences are at least as effective and probably more effective with inservice teachers than with preservice teachers. Inservice teachers' views of the value of such experiences equal those of preservice teachers, and changes in their behavior, knowledge, or affect are as strong or stronger. The reason for this is unclear but may result from inservice teachers' ability to apply desirable practices in their own classrooms with natural learners. Laboratory experiences thus offer a promising, though infrequently used, method of improving inservice teacher education.

Fifth, and related to the above, the effect of laboratory experiences is enhanced when some work with natural learners is included. Experience with natural learners, however, need not, and it could be argued should not, be extensive. Furthermore, there is no evidence indicating that a series of laboratory experiences must culminate in natural classroom practice. Rather, work with school-age learners is likely to be most efficacious when simulated, on-campus experiences precede and follow it.

Sixth, the most effective forms of laboratory experience are characterized by clear outcomes that are made known to the participants, attention to instruction that helps participants understand the outcomes and their purpose, and guided debriefing about the experience. Relatedly, the effectiveness of laboratory experiences is enhanced when they are integrated into a broader, organized pattern of instruction. It seems that laboratory experiences are best viewed not as ends in themselves but as ways of "anchoring" and enhancing didactic instruction. It is surprising, however, that the verisimilitude or degree of reality present generally does not appear critical to the success of laboratory experiences.

Seventh, although recent forms of laboratory experience, such as computer simulation, appear to hold promise, there is to date insufficient evidence of its effect to warrant wholehearted or widespread adoption of the techniques in the preparation of teachers. Proponents of such experiences press for their inclusion in spite of this lack of evidence and without consideration of earlier findings. Proponents of these experiences must provide additional information regarding their most effective use.

Eighth, and relatedly, recent efforts to produce laboratory experiences have emphasized development and innovation to the neglect of evaluation. Furthermore, developers of laboratory experiences seem mostly to disregard the body of research that could inform their work. The substantial, though incomplete, body of research on microteaching, minicourses, media-based simulators, and other forms of laboratory experience seems not to be considered by those who develop technological simulations. Specifically, and as one example, computer simulations are unlikely to change the ways in which teachers behave or think in natural classroom settings unless they afford at least some direct experience in applying the desirable behaviors or ways of thinking with school-age learners. Proponents and developers of alternative forms of laboratory experience must provide evidence of each method's effects.

Ninth, and sadly, renewed interest in providing "anchored" instruction for teacher education students often overlooks or rejects earlier methods of laboratory experience on the grounds that they are not effective or are no longer appropriate for contemporary outcomes—such as development of reflective or analytical ability—when, in fact, research suggests that they may produce a variety of desirable and contemporary results. Thus, case-based instruction or computer-based simulations are adopted, about which we know very little, or students are sent into the field with the hope that they will witness, experience, and assimilate desirable concepts, attitudes, and behavior, in spite of growing evidence to the contrary. Or, equally troubling, laboratory experiences, like microteaching, are used without consideration of their efficacy or the research that reveals their weaknesses.

Finally, it is reasonable to believe that on-campus clinical experiences may be more effective when multiple, diverse experiences are provided in an organized series of instruction. A series of experiences that include microteaching with analysis, Reflective Teaching, videotaped role-playing with debriefing, and some experience with school-age pupils is likely to promote a broader range of desirable outcomes, to develop participant learning that is more resilient, and to make transfer to natural classrooms more likely.

Laboratory experiences hold the potential to provide effective, highly efficient professional experiences in the preparation of teachers. When used appropriately and wisely, the effects of these experiences are superior to extensive and extended field-based experiences currently in vogue. On-campus laboratory experiences can develop teacher behavior, promote desirable cognitive abilities, and develop more positive affect among teachers/participants. It is time to consider what is known about laboratory experiences—what they can and cannot do—to base their use on this knowledge, and to aggressively seek to extend and expand this body of knowledge to use most effectively those forms or combinations of laboratory experience likely to contribute to the preparation of teachers.

Note

1. Due to space limitations, only references cited and one table are presented. Complete tables and bibliography can be obtained from the authors.

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6 Making Sense of Teaching and Learning: A Case Study of Mentor and Beginning Teacher Problem Solving

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ABSTRACT

When schools and school districts provide mentoring assistance to novice teachers, it is typically with a "nuts-and-bolts" approach (i.e., "just go back to your classroom and do this"). Increasingly, however, we are calling for teachers who are critical thinkers who engage in integrative, analytical problem solving. Is "nuts-and-bolts" assistance enough? This case study of a mentor and first-year teacher uncovers the role of a mentor as problem-solving coach. The study examines (a) the nature of this beginning teacher's problems with curriculum, instructional delivery, and student interactions; (b) the nature of the dialogue between the mentor and the beginning teacher as well as the problem-solving approaches used by the mentor to help the beginning teacher make sense of teaching and learning in his classroom; and (c) the relation between these problem-solving approaches and changes in the beginning teacher's classroom practices.

That beginning teachers have problems is not a new issue. Conservative estimates have suggested that more than 30% of beginning teachers leave during their first 2 years of teaching (Haipt, 1990). A significant issue in beginning teacher attrition has been the perspective of schools that beginning teachers enter teaching with the knowledge and skills of experienced teachers. Thus, beginning teachers are repeatedly placed in teaching assignments that require an expert's curricular knowledge, human relations skills, and knowledge of learners and learning.

Where schools and school districts have attempted to address the problems of beginning teachers, mentoring has been a common component of induction programs. But the mentor's role in helping the beginning teacher learn to teach often has been limited to technical assistance, crisis management, or personal support. Huffman and Leak's (1986) study of beginning teachers' perceptions of help received from mentor teachers revealed several areas of commonly provided "assistance": (a) information on policies, procedures, rules, and expectations; (b) sharing of instructional materials; (c) advice on classroom organization; (d) advice on time management; (e) clarification of subject matter required in the school curriculum; and (f) teaching "tips."

A critical question that needs to be asked is this: Is such assistance enough? Studies of the problems of beginning teachers (e.g., Dropkin & Taylor, 1963; Smith, 1950; Veenman, 1984) have captured their struggle to make sense of the complex intersections among personal beliefs, relationships with students, curricular expectations, content and pedagogical knowledge, and classroom contexts that influence teaching and learning. If mentoring is conceptualized only as technical assistance, crisis management, or personal support, it seems unlikely that critical, complex problem-solving skills will be developed in the beginning teacher.

This case study of a mentor and first-year teacher examines the nature of the beginning teacher's problems with curriculum, instructional delivery, and student interactions. It also examines the nature of the dialogue between the mentor and beginning teacher and the problem-solving approaches used by the mentor to help the beginning teacher make sense of teaching and learning in his classroom. Finally, the study examines the relation between these problem-solving approaches and changes in the beginning teacher's classroom practices.

Theoretical Perspectives

For many beginning teachers, their closest experience to "real" teaching was the student teaching experience. It has been suggested by Gaede (1978), however, that student teaching "can only be viewed as a simulation of actual teaching" (p. 407). Similarly, Silberman (1970) proposed that student teaching is artificial because the regular classroom teacher remains responsible for everything. Thus, "the student teacher cannot feel the full impact of that responsibility" (p. 460).

Critical studies of problems of beginning teachers have illustrated that these problems remain fairly constant (see Table 6.1). Programs to support first-year teachers in schools (e.g., Fox & Singletary, 1986; Gehrke, 1991; McDonald & Elias, 1982; Ryan, 1979) have focused "on providing the beginning teacher with support and assistance in easing the transition from student to teacher" (Fox & Singletary, 1986, p. 12). But such programs have not necessarily focused on developing the complex problem-solving skills that help beginning teachers transfer "the theories learned in preservice training to appropriate teaching practices" (p. 14).

Programs to support beginning teachers in schools have also increasingly used mentors (Galvez-Hjornevik, 1986). Although there appears to be little agreement on a "precise definition of mentoring" (Merriam, 1983, p. 162), there is agreement on the roles that mentors assume as they work with beginning teachers (see Table 6.2). What these roles look like in practice is something we know less about. As Merriam (1983) noted: "The phenomenon begs for clarification" (p. 171).

This study examines one mentoring relationship and the dialogue between the mentor and a first-year teacher regarding the beginning teacher's classroom problems. There exists virtually no research relative to studying and analyzing the dialogue between a mentor and a first-year teacher with regard to problem solving. Lambert and Lambert (1985) and

TABLE 6.1 Problems of Beginning Teachers

Problem	*Study*
Discipline	Dropkin & Taylor (1963), Stout (1952), Veenman (1984), Wey (1951)
Motivating student interest and response	Veenman (1984), Wey (1951)
Dealing with and adapting to needs, interests, abilities, and problems of individual students	Smith (1950), Veenman (1984), Wey (1951)
Assessing student work	Veenman (1984)
Organizing and preparing lessons	Smith (1950), Veenman (1984), Wey (1951)
Organizing classroom work and routines	Dropkin & Taylor (1963), Veenman (1984)
Frustration with materials and supplies	Dropkin & Taylor (1963), Smith (1950), Veenman (1984)
Adjusting to teaching assignment and load	Stout (1952), Veenman (1984), Wey (1951)
Planning lessons and interpreting curriculum	Dropkin & Taylor (1963), Stout (1952), Veenman (1984)
Effective use of different teaching methods	Veenman (1984)
Awareness of school rules and policies	Veenman (1984)
Knowledge of subject matter	Smith (1950), Veenman (1984)

TABLE 6.2 Roles and Functions of Mentors

Teacher
Developer of talent
Coach
Challenger
Model
Questioner
Sponsor
Host
Guide
Advocate
Protector
Encourager
Counselor
Listener
Adviser
Inspirer
Friend

NOTE: Developed by comparison of role conceptualizations in Anderson and Shannon (1988), Clemson (1987), Galvez-Hjornevik (1986), Gehrke (1988), Healy and Welchert (1990), and Lambert and Lambert (1985).

Kilbourn and Roberts (1991) have, however, pointed to the importance of such dialogue.

Context and Data Source

The mentor and first-year teacher who participated in this study teach at a large suburban high school (2,000 students) in the Midwest. The school serves students within a 42-mile radius of an economically advantaged community. As part of a program to support new teachers in the school, first-year teachers are assigned mentors. These mentors are experienced teachers who are considered to be "effective" by the school's administrative team (i.e., principal, assistant principals, and department chairpersons). The assigned mentors receive no training and no support, either monetary or in released time.

The first-year teacher (Nick) graduated with the requisite student teaching experience from a teacher preparation program in a public university. At the beginning of the school year, Nick was assigned a mentor, Victor, who had 7 years of experience teaching at the high school. Victor held an advanced degree and was considered to be effective in classroom management, command of subject matter, and building positive relationships with students.

During the first 4 months of the year, Nick met Victor four times. Victor provided instructional materials such as curriculum guides, handouts, and curriculum materials. Nick commented:

> He [Victor] shared his materials with me. . . . I asked him questions, and he gave me materials. He is a really nice guy, and he knows a great deal, but I find myself asking questions and getting handouts. I've used the handouts with my classes, but they have not helped me.

In January, Nick's frustrations in the classroom and with Victor, together with the administration's frustrations with Nick, led to the assignment of a mentor, Luke, who had 20 years' experience and a reputation for excellence in subject matter and relationships with students. Luke has been described as thoughtful and analytical, both as an individual and in his teaching practices. As a former department chair, he also had experience in clinical supervision.

Nick and Luke met three to four times a week, usually after school, to talk. Their dialogues lasted 30 to 90 minutes, depending on the problems discussed and the problem-solving approaches used by Luke. Both Nick and Luke volunteered to participate in the study.

Methodology

A case study approach was used to generate detailed descriptions of this context-specific mentoring relationship. Data were collected in several ways. From January to May, the dialogue sessions between the mentor and first-year teacher were audiotaped, and observations of the sessions were made. Following the dialogue sessions, subsequent classes of the first-year teacher were audiotaped and observed. Additional observations of the first-year teacher's classroom were made by the principal, two assistant principals, and the department chairperson. Postobservation conferences between those observers and the first-year teacher were audiotaped and observed. From the audiotapes and observation sessions came 1,471 pages of transcription and field notes.

Content of audiotapes and observers' field notes were analyzed using the constant comparative method advocated by Glaser and Strauss (1967). A coding and memoing process was used to classify, define, and categorize themes and patterns as they emerged in the data. Codes represented context, process, events, and content of the dialogues between Luke and Nick as well as events in Nick's classroom. Findings were clarified, and verified, in two complementary ways (see Guba, 1981): first, through analysis by the investigators separately and together and, second, through clarification and verification by the study participants.

For the purposes of this chapter, we will present a snapshot of this first-year teacher's problems teaching the novel *One Flew Over the Cuckoo's Nest*. We will do this through (a) portions of the dialogues that occurred between Nick and Luke and (b) a portion of a classroom transcript of the lesson resulting from these dialogues.

Results

The dialogues between the mentor (Luke) and first-year teacher (Nick) revealed that both Nick and the school's administrators believed that discipline was Nick's most pressing problem. Nick commented, "In college you are not really trained to deal with discipline problems, with behavior, and with classroom management. . . . I was strict [but] I lost them. . . . Everything was herky jerky." But the dialogues also revealed that Nick's problems with discipline were connected to other problems. To start, Nick was confused about curriculum (i.e., What do I teach, why, and in what sequence?). In one dialogue, Nick explained:

> I know American literature, but I never taught it before. I was never responsible for organizing a plan of content to be implemented. . . . I used somebody else's study guide, and I wasn't even following it. . . . There was really no sense of direction or concept of time that the kids could figure out.

Nick also was confused about instructional delivery and students' reactions to that delivery. Nick approached high school teaching and high school students based upon his own experiences in college:

> I tried to teach the students . . . at the same level that I learned at in college. I felt like most of the time I wasn't making myself clear, everything was just going over their heads. When I did my lesson plans, I would reflect back to what we did in college, what my professors talked about, and to my class notes. . . . Students eventually gave up.

To help Nick address the interactive nature of his classroom problems, Nick's mentor, Luke, used several problem-solving approaches. Often Luke would begin by prescribing a course of action for Nick. In one session Luke noted, "I'm suggesting that you structure the period so that [students] have . . . significant reading time in the classroom with you modeling by reading the book with them." Luke would follow his prescription with a rationale for this particular action, "If you only give them 10 minutes to read, they're not going to get anywhere."

Next, Luke might share a personal example and help Nick think differently about his problem (e.g., he had not read the book before, and he was not really sure how to begin). In one dialogue, Luke explained:

> I'm doing some independent work with a kid reading *The Chocolate War* and with another student who is reading *Slaughter House Five.* We're reading, kind of like, in synch. As things strike me, I bring them up, and we talk. . . . I'm not advocating that you

> not be prepared or not read books in advance, but maybe you might want to capitalize on the opportunity to read with your students so that you and the kids are reading for enjoyment, not just completing the book."

Luke would encourage Nick to plan his lesson for Luke. In one session, Luke asked, "How soon are you going to teach *Cuckoo's Nest?* . . . Since I haven't read [it] . . . the day before you begin teaching, you should sit down with me, show me how you're going to present this."

As Nick developed a blueprint for his lesson, Luke modeled interactions with students. The following is an example:

> Luke: Use your book . . . mark it up. . . . Every time I find something about a theme I have identified with kids, I mark it up so I can focus myself and students. . . . I would go in and tell them that I found the opening of the book really, really confusing, that it is hard to follow. Then I'd ask them, "What is the purpose of an opening like this?" . . . What does this line of questioning do for students?
>
> Nick: . . . I think it allows kids to begin thinking . . .
>
> Luke: After I accepted . . . broad answers, I would begin asking real specific questions that have concrete answers like, "Describe Nurse Ratched. Give me three or four qualities of Nurse Ratched." After a few students give responses . . . get to a deeper meaning . . . like, "Think about her name. . . . How does this get into the whole thing of machinery and combines?" . . . [T]he substance acts as a real springboard to discussion.
>
> Nick: So I could ask questions . . . in order to ensure that I am getting answers, understanding, and mastery of literary concepts?
>
> Luke: Bingo!

Following Luke's modeling, Nick would rehearse the next step in the lesson:

> Nick: I could ask, "What are the two groups? What's the difference between the two groups?" Then later in discussion after the quiz I could say, "The chronics and the acutes are radically different because . . ." Then have the kids discuss the differences by looking at the characters who are in each one of the groups.

Luke caused Nick to reflect upon his experiences. In this instance, Nick recalled the problem he had organizing instruction and interacting with students. The format Luke suggested made sense to Nick: "I see . . . I think I'm really watering it down for them. I find myself explaining a lot of things . . . and that's why it takes so long with these discussions."

While Nick was reflecting upon his experiences, Luke provided another prescription:

> Luke: The first thing you have to do is to sit down and figure out what you are trying to accomplish by this discussion. Are you trying to find out . . . if they've read this? Are you trying to find their understanding and mastery level?
>
> Nick: What about lecture? Don't I have to lecture about these books?
>
> Luke: . . . [D]iscussion [is] more effective than a "canned" lecture.

The problem-solving approaches used by Luke to help Nick make sense of teaching and learning facilitated the transfer of new practices into Nick's classroom. For example, strategies suggested by Luke were apparent in Nick's organization and setup for the study of *One Flew Over the Cuckoo's Nest*. Following the assignment of the first 40 pages of the novel, Nick began giving students at least half the period to read and then framed discussion with the types of questions suggested by Luke.

> Nick: Howard, why don't you give us the setting of the novel, where and when?
>
> Howard: In the psychic ward or whatever.
>
> Nick: OK, it's in a mental institution, in the psychotic ward. . . . Who is the narrator?
>
> Paul: Oh, the Chief.
>
> Nick: Chief Bromden. . . . What do the orderlies call him? Sam?
>
> Sam: Rumdon, Broomer, or whatever.
>
> Nick: Why is that, Mike?
>
> Mike: 'Cause he sweeps the hallways.
>
> Nick: OK, he's usually given the duty of sweeping or mopping the hallways. . . . What do we know about him? . . . Sam?
>
> Sam: He's deaf. . . . But he's not.
>
> Nick: . . . [T]his is a cover-up. Why would he do such a thing?

Sam: So they just leave him alone, and he can just watch what's going on . . .

Nick: All right. . . . What can he do, to benefit himself and the other patients? Mike?

Mike: He can stay in longer.

Nick: OK, he can stay in the institution. Bart?

Bart: He can listen in to conversations.

Nick: He can listen in. He can eavesdrop and overhear conversations, especially between people like Nurse Ratched . . . doctors, orderlies, and so forth . . .

Student: . . . Like one time he says she comes in, she has no makeup on, her bag's full of junk . . .

Nick: Let's get to that . . . on page 10 . . . in her purse she has . . . "wheels and gears, cogs polished to a higher glitter, tiny pills that gleam like porcelain, needles, forceps, watchmaker's pliers, rolls of copper wire" . . . What kind of image do you get?

Student: Bag lady.

Nick: What do you think of?

Student: What does she use this for, her daily schedule?

Nick: Her daily schedule. She uses these items for her daily schedule . . . running a mental institution. . . . Think about all these items. Cogs, porcelain, needles, forceps, pliers, so forth. What does this mean? . . . [T]hink about how Nurse Ratched runs this place. Mike?

Mike: Mechanically.

Although Nick had a strong college program in American literature, he had difficulties interpreting *high school* curriculum and organizing content. Thus, it was clear to Nick's students that he had never taught. Nick had no clue about how to plan for teaching or how to develop purposefulness in teaching. Furthermore, Nick relied on the college lecture, but he was confused and confusing. His pacing and content selection made little sense to students. Nick did not perceive the critical link between teaching and students' motivation to learn from that teaching. He had no credibility with his students; they showed him that through troublesome behavior.

Nick's first mentor used a "nuts-and-bolts" approach to working with Nick that was typical of the mentors in this high school. A quick prescription was made, a handout shared, and it was anticipated that the first-year teacher was ready to return to the classroom. Luke's careful dialogues with Nick were atypical and modeled on the questioning techniques Luke embedded in his own classrooms. Through his experiences with both mentors, Nick came to his own conclusions about mentoring:

> You don't want . . . advice. . . . You have to learn how to work things out because you're going to be confronted with situations that you would never think of. . . . You gotta be able to learn how to recognize, confront, and solve problems. You've gotta be able to grow from your experience.

Discussion and Implications

Nick's problems were typical of problems identified in other studies of beginning teachers (refer to Table 6.1). But Nick's discussions with his mentor, Luke, clarified the interrelated nature of these problems. Each problem served as a scaffold for another, which in turn had an impact on Nick's overall effectiveness in the classroom. For example, although Nick and his administrators saw discipline as his most pressing problem, student misbehavior was embedded in curricular and instructional issues. Nick's understanding of curriculum—what, why, and in what sequence things get taught—was negligible. The content background he brought from college was ill-matched to the curricular requirements of the high school. A strong subject matter background and a course in curriculum theory did *not* ensure that Nick also knew how to organize and prepare lessons and implement content within the framework of the school's required curriculum.

Not only did Nick feel clueless with regard to *what* to teach, but his primary instructional model (i.e., college lectures) and his limited experience with learners and learning (i.e., student teaching) left him in a quandary about *how* to teach. For Nick, the connection between instructional strategy and lesson purpose was elusive. Lecture was the predominant strategy that Nick saw in college. So, although research points to "thoughtful discussion, and not just teacher lecturing or student recitation, as characteristic of the discourse involved in teaching for understanding" (Brophy, 1992, p. 5), lecture is what Nick saw and transferred into his high school classroom.

Speaking with students about content also proved difficult for Nick. He was not comfortable with the curriculum; he was confused himself about why students were doing all this reading. Thus, Nick felt even greater pressure to follow his lecture script. Students who read ahead or asked questions that were out of order were viewed as "distracting from the lesson." Nick responded defensively, tending to resort to "police" quizzes and assignments to punish them. He would tell students they would "discuss" a book, and he would stop questions to stick to his lecture script. Such mixed messages only served to confirm for students that Nick did not know what he was doing. They didn't trust him to teach them, so they interrupted the lesson with distracting questions and smart-aleck comments.

Nick perceived curriculum, instruction, and interactions with students in fragmented ways. He did not see the interrelatedness of teaching and learning. *Why* Nick taught as he did and the reasons underlying students' responses to him were unclear to Nick. Nick lacked practical theories (Sanders & McCutcheon, 1986) and practical knowledge (Clandinin, 1986) about teaching—the conceptual lenses that enable teachers to examine their reasons and rationales for teaching as they do.

Nick's mentor, Luke, used interactive dialogue to engage Nick in problem identification, problem anticipation, problem posing, problem solving, and evaluation of problem solutions. Problem-solving approaches embedded in Nick and Luke's dialogue (see Table 6.3) provided a vehicle for Nick to define, rehearse, practice, refine, and reapply solutions to his classroom problems within a context of content and instructional decisions as well as attention to the effects of these decisions on students.

Prescription giving was only a starting point. The recommendation of a remedy addressed Nick's frustration and survival needs, but the prescription alone did not help him develop more complex cognitive constructs about teaching and learning. Prescriptions were followed by rationales and parameters for use, so that Nick would have a decision-making framework instead of a Band-Aid.

Prescription giving was enhanced by personal storytelling. Examples from the mentor's classroom experiences provided illustrations that served as a context for Nick's thinking about his own classroom experiences. This was important, as Nick lacked such practical knowledge. Rehearsal provided Nick with a vehicle for figuring out rules, parameters, and the know-how of using a particular prescription. Carter and Koehler (1987) have observed how important it is for beginning teachers to understand "appropriateness of application."

TABLE 6.3 Problem-Solving Approaches Used by the Mentor

Prescription giving	Remedy giving by the mentor with a rationale, examples, alternatives, parameters of use, or rules
Personal storytelling	The mentor gives an example of his or her own classroom experiences to set a context for the prescription
Rehearsal	Verbal practice or rehearsal by the mentor and novice teacher of a strategy to be implemented in the classroom the next day, together with problem anticipation and troubleshooting
Role-playing	Playing and reversal of roles by the mentor and novice teacher reflecting problem situations or concerns of the novice teacher; both teacher and student roles are played
Modeling	Verbalization by the mentor of a teaching strategy or interaction technique with demonstration
Oral blueprinting	Oral planning by the novice teacher with critique and refinement by the mentor
Replay	Reconstruction of the day's events by the novice teacher with probing and clarifying questions and feedback from the mentor

Role-play enabled Nick to construct what Garman (1986) would call classroom "construals," or concretized visualizations of classroom situations. Such visualizations provided important vehicles for Nick to practice teaching prior to implementing the lesson in the classroom. These visualizations also enabled problem anticipation and troubleshooting with the mentor.

Modeling helped Nick develop standards of practice—important points of comparison that he could call up and reflect on during actual classroom teaching. Nick's classroom practices closely resembled those that his mentor, Luke, had modeled for him during a dialogue session. In subsequent dialogue sessions, Nick would often check his behaviors and decisions by reconstructing the model Luke had provided and comparing his own classroom performance to Luke's model. Modeling provided Nick with a template against which to measure the success of his own classroom actions and to provide an alternative course of action when classroom events were not as successful as he would have liked them to be.

Orally blueprinting a lesson helped Nick see the interrelated nature of his problems. Defining what appeared to be a single concern—how to start a particular novel, for example—led to other issues embedded in the problem—questioning strategies, pacing, assessing student learning, classroom procedures for discussion—as Nick articulated his lesson plan to Luke. Through oral blueprinting, Nick learned to examine multiple factors affecting classroom decision making and to explore why he did what he did in the classroom, together with potential effects of his actions. Critical supervision theorists (Garman, 1986; Smyth, 1989) have advocated the value of such critical pedagogy for the improvement of classroom teaching.

The reconstruction of Nick's lessons through replay enabled him to talk about what happened as well as what comes next in content, instruction, and follow-through with students. This movement from a reactive to a proactive view was important. First-year teachers tend to be consumed by survival issues (Borko, 1986; Ryan, 1979). The kind of recipe-giving that frequently characterizes student teacher-cooperating teacher-university supervisor interactions, or administrator-beginning teacher interactions in schools, may keep the beginning teacher "stuck" in survival concerns. Replay helped Nick to think forward to consequences and next steps.

Voices from teacher induction have advocated active problem-solving approaches to mentoring (e.g., Fox & Singletary, 1986; Gehrke, 1991). And Nick's actions in the classroom were in response to a *complex context* of events, people, and interactions. Luke, the mentor, was able to coach and coax the development of higher cognitive views of teaching and classroom practices through interactive, sustained dialogue that focused on problem solving. Luke was, in many ways, a "cognitive coach" (Costa & Garmston, 1985). He used "questions and statements to elicit specific cognitive functions that produce data, relationships, and generalizations to help resolve problems" (p. 73). In doing so, Luke helped Nick bridge the gap between professional preparation and practice.

A study of this type, focusing on a single case, is not conducive to making generalizations. We believe, however, that the problem-solving approaches used by this mentor in sustained dialogue with this beginning teacher would be replicable in both mentor training and teacher preparation programs. These problem-solving approaches enabled this beginning teacher to make sense of teaching and learning in content- and context-specific ways. If we want beginning teachers who can recognize, anticipate, and solve classroom problems, we must *teach them* to do so. In this case, interactive dialogue using problem-solving approaches proved more useful for improving this beginning teacher's classroom practices than mere nuts-and-bolts prescriptions aimed at technical assistance or crisis management—the more typical Band-Aid approach to beginning teachers' problems.

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7

Roles and Responsibilities of the Student Teacher Supervisor: Matches and Mismatches in Perception

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ABSTRACT

Research to date has failed to clarify the central roles and responsibilities of the three members of the student teaching triad—student teachers, cooperating teachers, and university supervisors. The primary objective of this investigation was to delineate the primary functions of the university supervisor as interpreted by the three groups who are represented in each triad. Respondents consisted of 88 student teaching supervisors, 572 cooperating teachers, and 444 student teachers who completed a 14-item survey that considered three general domains of responsibility and 14 specific role functions the university supervisor might be expected to fulfill. Although matches in perceptions of the primary roles of the university supervisor were as common as mismatches, there were important differences in the ways the members of the triad interpreted specific role functions. The chapter closes with a discussion of the implications of the findings for those who seek to upgrade the quality of the student teaching experience.

Objectives

A central feature of American teacher preparation programs since the mid-1800s, the student teaching apprenticeship typically brings together three people—a student teacher, a cooperating teacher, and a university supervisor.[1] These three individuals are expected to work together to facilitate the professional transition of the student teacher from an inexperienced novice to a competent beginning teacher. The wisdom of folklore suggests that the basic roles and responsibilities of each member of the student teaching triad are well established, highly delineated, and fully understood by all involved. Unfortunately, for the members of most student teaching triads, this misconception ranks as one of the most enduring myths in teacher preparation (Guyton & McIntyre, 1990).

Although the research literature in this field is relatively sparse and outdated, a number of studies conducted in the United States, Great Britain, and Australia have indicated that the primary roles and functions of each member of the student teaching triad are typically implicit rather than explicitly stated and are likely to be unclear (Beswick, Harmon, Elsworth, Fallon, & Woock, 1980; Boothroyd, 1979; Cope, 1973; Tittle, 1974; Yates, 1981; Yee, 1967). Each member may, therefore, develop role conceptualizations and expectations that do not align with the expectations of the other members of the triad. Research has also shown that this lack of clarity may give rise to a number of interpersonal problems or tensions within the triad, including the emergence of competitive versus cooperative attitudes, the inclination to become increasingly more negative toward one another, and the tendency to blame each other when problems arise

(Tittle, 1974; Yee, 1967). In a similar vein, the results of a study by Turney (1977) suggested that members of the student teaching triad are not likely to develop cooperative relationships with one another unless these role expectations are clearly delineated and communicated to all members of the triad.

As a closer examination of the references listed above will indicate, most of the research studies that have considered the professional roles and responsibilities of the student teaching supervisor were conducted prior to 1980. Moreover, these investigations usually focused more attention on the actions or perspectives of cooperating teachers and/or student teachers than on the professional responsibilities of student teacher supervisors. As Knowles, Cole, and Presswood (1994) note, "Unlike the plethora of literature on the cooperating teacher, research on the role of the university supervisor in field experiences is relatively scant" (p. 197). Our comprehensive review of the research literature in this field confirms this conclusion. We could identify only four research reports published since 1981 that have focused on the professional roles and responsibilities of student teaching supervisors. These more recent qualitative studies have provided rich descriptions of the professional roles university supervisors might enact within the student teaching experience and have highlighted a general role that was not stressed in the earlier research literature in this field, namely, the need for student teaching supervisors to provide direction and support for cooperating teachers as well as student teachers (Borko & Mayfield, 1993; Catalano & Tillit, 1991; Knowles et al., 1994; Rikard, 1990).

As this brief overview suggests, the research literature related to the professional roles and responsibilities of the student teaching supervisor is relatively sparse. To our knowledge, no research to date has focused on the central objectives of this study, which were (a) to generate a comprehensive description of the primary roles and responsibilities of the student teaching supervisor as delineated by all members of the student teaching triad—student teachers (STs), cooperating teachers (CTs), and university supervisors (USs)—and (b) to identify matches and mismatches in perceptions of the US's functions across these three groups. The design of the study focused on two questions:

1. Which of the 14 roles and responsibilities of the US cited in the *ASU University Supervisor Functions Survey* (Enz & Freeman, 1992) are viewed as most important by members of the student teaching triad?

2. Do perceptions of the relative importance of the US's roles and responsibilities differ among
   a. those working in elementary and secondary schools and/or
   b. members of the three groups who are represented in each student teaching triad?

Perspective

As noted earlier, a lack of clarity regarding the basic roles and responsibilities of each member of the student teaching triad is likely to undermine the development of meaningful working relationships among the three primary participants in the student teaching experience. Cope (1973), for example, has shown that this lack of clarity may spawn feelings of distrust. Guyton and McIntyre (1990) theorize that these and other interpersonal problems or tensions are indications that the members of the triad have expectations for each other that have not been fulfilled. These authors argue that the participants in each student teaching triad must take steps to ensure that role expectations are made explicit and are clearly articulated among all three members, a conclusion that was also cited in an earlier research study by Turney (1977).

As noted above, one of the basic goals of this study is to clarify the roles and responsibilities of one of the three primary participants in the student teaching experience—that of the US. Consistent with Guyton and McIntyre's theoretical conjectures, the study will also attempt to identify both matches and mismatches between the functions USs believe they should fulfill and the functions the other members of the triad—STs and CTs—expect them to fulfill.

Methods

Samples

Three samples, corresponding to the three members of each student teaching triad, were selected—a CT sample, a ST sample, and a US sample. The *cooperating teacher sample* consisted of 572 teachers—432 elementary school teachers (Grades K-8) and 140 secondary teachers (Grades 9-12). Members of this sample were either working with STs at the time of the study or were preparing to serve in this role. Of these individuals, 190 had worked as CTs prior to the academic term in which the study was conducted; 382 had not. All members of the CT sample were enrolled in a graduate course offered by Arizona State University (ASU) titled Assessment and Supervision of Instruction. Teachers must successfully complete this course as a precondition for working with STs from ASU. Candidates for CT assignments must also have completed at least 3 years of full-time teaching experience. The mean levels of teaching experience among members of the CT sample were 11 years and 13 years for the elementary and secondary subsamples, respectively.

The *student teacher sample* consisted of 444 STs—268 seeking elementary school certification (Grades K-8) and 176 earning secondary teaching credentials (Grades 9-12). Members of this sample represent a census of all students who completed their student teaching experience at ASU during the academic year in which the study was conducted. A majority of these individuals (*N* = 246) were enrolled in a four-semester, tightly sequenced undergraduate teacher preparation program that features meaningful involvement in schools during each of the four semesters. The other members of the ST sample (*n* = 198) were enrolled in a postbaccalaureate teaching preparation program designed for those students who have previously earned a bachelor's degree and who now wish to obtain initial teacher certification. In contrast to the undergraduate program, the postbaccalaureate program lacks carefully structured early field experiences. Nevertheless, students in both programs are required to participate in a 15-week, full-time student teaching apprenticeship in the final semester of the program. It is interesting to note that the median ages of the members of the two subsamples did not differ to any significant degree. These medians were 30 and 31 years for undergraduate and postbaccalaureate students, respectively, which indicates that only a small proportion of either subsample could be characterized as "traditional" 20- to 23-year-old teacher education students.

The 88 individuals in the *university supervisor sample* represented 101 individuals who served as USs at ASU or at Northern Arizona University (NAU) during the academic year in which the study was conducted. The members of this sample completed the supervisor functions survey when it was mailed to them; the others did not (response rate = 87%). The total number of STs the individuals in this sample had supervised prior to the time they completed the survey ranged from 7 to 250 (mean = 60 students). Of the US sample, 50 members had primary responsibility for elementary-level STs; 36 were mostly responsible for the supervision of STs working

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in secondary schools; 32 were employed as USs at ASU; 56 held similar positions at NAU.

Design of the Survey Instrument

The *ASU University Supervisor Functions Survey* was developed by Enz and Freeman (1992) to assess each participant's perceptions of the relative importance of selected roles and responsibilities of the USs. The 14 roles and responsibilities ultimately included in the instrument were derived from three different sources of information—the authors' reviews of student teacher handbooks, a comprehensive review of related literature, and formal interviews of successful university supervisors.

First, we reviewed student teaching handbooks from 20 colleges of education across the United States and identified specific functions that were cited in those texts. Next, we conducted a comprehensive review of the literature in an attempt to identify empirical research or conceptual analyses focusing on university supervisors and/or the roles these individuals might be expected to fulfill within the student teaching experience. These two sources of information typically portrayed the USs' roles and responsibilities in relatively narrow terms focusing primarily on their general functions as (a) liaisons between the university and the public schools and (b) clinical supervisors who provide guidance and support for student teachers. As noted in the introduction, however, a relatively limited body of recent research suggests that student teaching supervisors also need to provide direction and support for cooperating teachers (see, for example, Borko & Mayfield, 1993).

As the final step in this series of analyses, we interviewed 10 USs to determine how they defined their roles and responsibilities. These individuals were selected on the basis of (a) their experience in working with STs (all had supervised at least 50 STs prior to the interviews) and (b) formal evaluations of their performance as supervisors (all had received consistently high ratings of their performance from both STs and CTs). The responses of those who were interviewed confirmed the results of our earlier analyses indicating that the primary roles of student teaching supervisors are typically defined in terms of their functions as university liaisons or as clinical supervisors. Those who were interviewed, however, seemed to place more emphasis on their roles as conflict managers or as mediators among the three members of the student teaching triad than was suggested by our earlier reviews of student teaching handbooks and the professional literature. And, consistent with the results of the most recent research in this field, those who were interviewed stressed the need for USs to provide direct forms of professional support and encouragement for CTs as well as for STs.

Collectively, these three sources of information suggested that university supervisors are expected to address three *general domains* of professional responsibility in supporting the student teaching experience—mentor, professional resource, and interpreter. The *mentor role* includes actions a US might take to express support, encouragement, instructional guidance, and feedback to the ST. The *professional resource role* parallels that of the mentor role and includes actions a US might take to provide professional support and guidance to the CT. The *interpreter role* focuses on the dynamics of the student teaching triad and includes activities that center on mediating tensions prompted by apparent conflicts between the expectations of public schools and those of the university as well as other efforts to facilitate communication among all three members of the student teaching triad.

Each of the three domains can, in turn, be defined in terms of a set of *specific role functions.* As delineated in the survey instrument used in this investigation, the mentor role includes five specific role functions (e.g., observes student teacher's lessons and provides feedback); the professional resource role encompasses four specific functions (e.g., assists cooperating teacher in preparing final evaluation narratives); and the interpreter role includes five specific functions (e.g., mediates personality conflicts between student teacher and cooperating teacher, if necessary). The distribution of specific role functions across the three general domains of responsibility is shown in Table 7.3. The results of a confirmatory factor analysis indicated that this assignment of specific functions to general domains is statistically sound.

Data Source

Database

The database for this investigation was derived from the responses of 88 USs, 572 CTs, and 444 STs to the 14-item *ASU University Supervisor Functions Survey.* Participants were asked to use a weighted rank procedure to record their responses to each survey item. In accord with the instructions for this procedure, a total of 100 points were allocated across the 14 functions cited in the survey. The number of points assigned to a given item reflected a respondent's perception of the relative importance of the role or responsibility that was described in that item. Student teachers were required to complete the survey during a daylong orientation prior to student teaching. Completion of the survey was also mandatory for CTs. Members of this group completed the instrument during the initial meeting of the graduate course they were required to take as a precondition for serving as cooperating teachers. These conditions ensured a survey response completion rate of nearly 100% for these two groups of participants. The survey was also mailed to 101 USs and completed by 88 of these individuals (response rate = 87%).

Preliminary Analyses

As a preliminary step in data analysis, a series of statistical tests were conducted to determine if there were any significant differences in mean levels of response to any of the 14 items in the "supervisor functions survey" among (a) CTs who had ($n = 190$) or who had not ($n = 382$) worked with STs prior to their completion of the survey, (b) STs who were enrolled in the undergraduate ($n = 246$) and postbaccalaureate ($n = 198$) teacher preparation programs, or (c) USs from ASU ($n = 32$) and NAU ($n = 56$). These statistical contrasts included MANOVA tests that considered differences in responses across all items in the survey and *t*-tests that examined differences in means for each of the 14 survey items. In an attempt to increase the power of these tests, the probability of a Type I error was fixed at .10 rather than at .05 or .01 in each analysis. Even under these relatively liberal conditions, none of the observed differences in subsample means was statistically significant—either across all items in the survey (MANOVA tests) or for any of the 14 survey items (*t*-tests). The data from each subgroup pair were, therefore, merged prior to conducting the analyses that follow. This aggregation yielded one set of data for each of the three groups that are represented in the student teaching triad.

Results

1. What roles and responsibilities are viewed as most important?

The data in Table 7.1 portray the relative levels of importance each group—CTs, USs, and STs—attributed to each of the specific functions that were cited in the survey. The 14 functions are listed in rank order

TABLE 7.1 Perceptions of the Relative Importance of University Supervisor Functions

	Rank Order of Importance			
	CT (n = 572)	*US (n = 88)*	*ST (n = 444)*	*Overall*
Observe ST's lessons and provide feedback	1	1	1	1
Provide moral support and encouragement to the ST	2	2	2	2
Facilitate feedback conferences between ST, CT, and US	3	3	4	3
Review ST responsibilities, requirements, and timelines	4	5	6	4.5
Evaluate quality of ST's lesson plans	6	4	5	4.5
Provide seminars.	5	10	3	6
Mediate personality conflicts between ST and CT	8	7	7	7
Confer privately with CT about ST's progress	7	6	14	8
Mediate differences in instructional styles between ST and CT	12	8	8	9
Provide direct link to the university	9	9	12	10
Assist CT in preparing ST evaluation narrative	10	13	9	11
Provide collegial support and encouragement for CT	11	11	10.5	12
Observe CT to determine instructional and management styles	13	12	10.5	13
Videotape ST's instructional presentation	14	14	13	14

(from most to least important) by members of each of the three groups. As these data indicate, two functions headed the list for all three groups, namely, "observe student teacher's lessons and provide feedback" and "provide moral support and encouragement to the student teacher." A third function, "facilitate feedback conferences regularly between the student teacher, cooperating teacher, and university supervisor," was rated either third or fourth in importance by all three groups. At the other end of the continuum, the two functions that were likely to be ranked as least important by all three members of the student teaching triad were "observe cooperating teachers to determine the instructional and management styles that will serve as models for the student teacher" and "videotape student teacher's instructional presentation."

Although the rankings were similar for all members of the triad, there were notable differences in the relative importance these three groups assigned to certain functions. For example, whereas STs ranked "provide instructional seminars that enhance the student teaching experience" as the third most important function USs fulfill, CTs ranked this function as fifth in importance, and USs ranked it tenth. In contrast, CTs and USs ranked the importance of "confer privately with cooperating teacher about student teacher's progress" far higher than STs. In fact, STs ranked this action as the least important of the 14 functions cited in the survey.

2. *Do perceptions of the relative importance of university supervisors' roles and responsibilities differ among those working in elementary and secondary schools?*

The mean number of points individuals working in elementary (n = 750) and secondary schools (n = 354) assigned to each domain of US responsibility are summarized in Table 7.2. The results of three 2 × 3 analysis of variance tests that were conducted to determine if the observed differences in means for a given domain were statistically significant are also summarized in this table. As these data indicate, the mean levels of importance individuals working in elementary schools attributed to each of the three domains were similar to the corresponding means for those working in secondary schools. And as the results of the ANOVA tests indicated, none of the observed differences in means for the two levels of schooling was statistically significant (alpha = .05). Likewise, there were no significant interactions between levels (elementary or secondary) and roles (ST, CT, or US) for any of the three domains.

In an attempt to provide an even more liberal test of differences in the perceptions of the relative importance of US roles and functions among those working in elementary and secondary schools, one-way ANOVA tests were conducted for each of the 14 items in the survey. Here again, the results provided reason to believe that perceptions of the relative importance of US roles and functions did not differ among members of

TABLE 7.2 Contrasts in Perceptions of the Relative Importance of University Supervisors' Role and Functions Among Those Working in Elementary and Secondary Schools

	CT		*US*		*ST*	
	Elementary *(n = 432)*	*Secondary* *(n = 140)*	*Elementary* *(n = 50)*	*Secondary* *(n = 38)*	*Elementary* *(n = 268)*	*Secondary* *(n = 176)*
Mentor domain						
means	43.07	41.90	47.58	47.89	49.00	50.45
(standard deviations)	(12.32)	(12.44)	(12.03)	(12.13)	(14.31)	(14.49)

Summary of 2 × 3 ANOVA Test

Source	*F Ratio*	*(p)*
Levels (elementary or secondary)	0.25	0.61
Roles (CS, US, or ST)	13.91	< .01
Levels × Roles Interaction	0.84	0.43

	CT		*US*		*ST*	
Interpreter domain						
means	31.87	31.28	30.80	30.75	31.05	28.84
(standard deviations)	(10.03)	(10.47)	(8.79)	(8.68)	(11.86)	(11.41)

Summary of 2 × 3 ANOVA Test

Source	*F Ratio*	*(p)*
Levels (elementary or secondary)	1.14	0.29
Roles (CS, US, or ST)	0.27	0.76
Levels × Roles Interaction	1.43	0.24

	CT		*US*		*ST*	
Resource domain						
means	25.62	26.47	21.52	21.39	19.60	20.30
(standard deviations)	(8.60)	(8.93)	(7.48)	(7.42)	(9.08)	(9.90)

Summary of 2 × 3 ANOVA Test

Source	*F Ratio*	*(p)*
Levels (elementary or secondary)	0.04	0.83
Roles (CS, US, or ST)	23.28	< .01
Levels × Roles Interaction	0.67	0.51

the elementary and secondary subsamples. Even when the probability of a Type I error was fixed at .10 rather than at a more conservative level such as .05 or .01, there were no significant differences in means for elementary-

and secondary-level participants for any of the 14 items on the survey. The data for these two subgroups were, therefore, combined prior to conducting the statistical analyses described below.

3. *Do perceptions of the relative importance of university supervisor roles and functions differ among the three groups who are represented in each student teaching triad?*

General Domains of Responsibility. The mean number of points CTs, USs, and STs assigned to each of the three general domains of US responsibility are summarized in Table 7.3. These means reflect each group's perceptions of the relative importance of a given domain. The results of one-way analysis of variance tests of differences in the mean number of points assigned to a given domain are also presented in Table 7.3. As these data indicate, the observed differences were statistically significant for the mentor domain (F ratio = 13.97; $p < .01$) and the professional resource domain (F ratio = 15.98; $p < .01$). Relative to the members of the other two groups, STs assigned (a) the highest number of points to the mentor domain (providing feedback and support for student teachers) and (b) the lowest number of points to the professional resource domain (providing encouragement and professional support for cooperating teachers). In contrast, differences in the mean number of points the three groups assigned to the interpreter domain were relatively small and were not statistically significant (alpha = .05).

Specific Role Functions. The data in Table 7.3 also summarize the results of one-way ANOVA tests centering on perceptions of the relative importance of the specific roles and functions of the US that are described in each of the 14 items in the survey. The mean number of points members of each of the three groups assigned to each role are presented in columns 1-3. Standard deviations are also presented in parentheses in these three columns. F ratios and p values are shown for each of the 14 items in columns 4 and 5. The results of Bertolli post hoc paired comparison tests are also presented in Table 7.3. Those differences in adjoining means (e.g., means for CTs and USs) that were statistically significant (alpha = .01) are starred (*). Significant differences in the mean number of points assigned to a given function by STs and CTs are noted by two stars (**) in the space to the right of column 3.

As inspection of the data in Table 7.3 will reveal, the three groups represented in each student teaching triad differed in their perceptions of the relative importance of 7 of the 14 roles and functions of the US that were cited in the survey:

TABLE 7.3 Contrast in Perceptions of the Relative Importance of University Supervisors' Roles and Functions Among Cooperating Teachers (CT), University Supervisors (US), and Student Teachers (ST)

	Means (Standard Deviations)				
	CT *(n = 572)*	*US* *(n = 88)*	*ST* *(n = 444)*	*F* *Ratios*	*(p)*
Mentor role domain	**43.28** **(12.64)**	**46.73** **(12.49)**	**49.50** **(14.20)**	**13.97**	**(<.01)**
Observe ST lessons and provide feedback	12.60 * (7.76)	18.60 * (12.20)	14.51 (8.84)	14.38	(<.01)
Provide moral support and encouragement for ST	12.68 (5.15)	12.87 (6.84)	12.92 (8.12)	0.07	(<.93)
Provide seminars	8.19 * (6.23)	5.35 * (5.12)	10.54 ** (6.74)	21.13	(<.01)
Evaluate quality of ST's lesson plans	6.57 (3.82)	7.81 * (4.71)	8.48 ** (5.69)	9.35	(<.01)
Videotape ST's instructional presentation	3.24 (5.49)	2.10 (3.03)	3.05 (4.25)	2.82	(<.06)
Interpreter role domain	**31.10** **(10.17)**	**31.24** **(8.78)**	**30.73** **(11.20)**	**0.10**	**(<.90)**
Facilitate triad's feedback conferences	9.66 (5.69)	9.79 (5.60)	10.28 (7.07)	0.59	(<.55)
Mediate CT and ST personality conflicts	5.88 (4.48)	6.27 (3.98)	5.49 (4.60)	0.85	(<.43)
Provide direct link to university	5.87 (5.06)	5.70 * (3.85)	4.24 ** (4.38)	8.47	(<.01)
Mediate differences in CT and ST instructional styles	5.12 (6.61)	5.98 (3.70)	5.36 (4.51)	1.45	(<.23)
Determine CT's intructional/management styles	4.57 (8.23)	3.50 * (3.60)	5.36 (4.69)	4.99	(<.01)
Professional resource role domain	**25.61** **(8.[illegible])**	**21.96** **(7.59)**	**19.81 **** **(9.96)**	**25.98**	**(<.01)**
Review ST's responsibilities, requirements and timelines	8.75 * (4.46)	7.08 (4.07)	7.93 (8.20)	2.41	(<.09)
Confer with CT about ST's progress	6.39 (4.88)	6.50 * (4.40)	2.84 ** (3.79)	44.52	(<.01)
Assist CT in preparing evaluation narrative	5.43 * (3.77)	3.20 (3.01)	4.62 (4.66)	7.57	(<.01)
Provide CT collegial support and encouragement	5.04 (4.93)	5.18 (3.33)	4.42 (3.60)	1.85	(<.16)

* Indicates that the results of Bertolli paired comparison tests were statistically significant (alpha = .01) for the adjoining groups (e.g., CTs and USs)
**Indicates that the differences in means for STs and CTs was statistically significant.

- Observe student teacher's lessons and provide feedback (1)
- Review student teacher's responsibilities, requirements, and time lines (4.5)
- Evaluate quality of student teacher's lesson plans (4.5)
- Provide instructional seminars that enhance the student teaching experience (6)
- Provide a direct link to the university and college (10)
- Provide collegial support and encouragement to the cooperating teacher (12)
- Observe cooperating teacher to determine instructional and management styles that will serve as models for the student teacher (13)

The numbers in parentheses are taken from Table 7.1 and represent the overall rank order of importance of a given role among the full set of 14 roles cited in the survey instrument. When combined with these rankings, the data presented in Table 7.3 indicate that there were important mismatches in STs', CTs', and USs' ratings of the relative importance of four roles and responsibilities that are traditionally viewed as central to the US's functions (see the first four functions listed above) as well as across three roles that might be viewed as less critical to the enactment of this position (see the other three functions listed above).

Discussion/Implications

Matches in Perceptions

Although differences in perceptions of the relative importance of USs' roles and responsibilities are likely to have more important implications for teacher education than similarities, it is important to recognize that matches in perceptions among the three members of the student teaching triad were as common as mismatches. For example, STs, CTs, and USs ranked the relative importance of the three general domains of supervisor responsibility in the same order: The mentor role was ranked as most important by all three groups, followed by the interpreter role and the professional resource role, in that order. And, although there were exceptions to the general pattern, the three groups also ranked the relative importance of the 14 specific role responsibilities that were cited in the survey in similar orders. The most notable exceptions were providing seminars and conferring privately with the cooperating teacher about the student teacher's progress.

Two of the specific roles and functions that all three groups ranked among the top four in importance were "observe student teacher's lessons and provide feedback" and "facilitate feedback conferences regularly between student teacher, cooperating teacher, and university supervisor." The enactment of both of these critical roles draws upon the US's skills in clinical supervision. It is, therefore, important to note that our review of student teaching handbooks and other literature in this field suggests that universities rarely provide training in clinical supervision for USs. Yet, there is good reason to believe this instruction would improve the efficacy of those supervisors who have limited skills or experience in this area (see Painter & Brown, 1979, and Wheeler, 1989).

Matches, rather than mismatches, also characterized the results of statistical analyses that centered on subgroup contrasts. For example, a series of *t*-tests indicated that perceptions of the relative importance of the roles and responsibilities of the US did not vary to any significant extent (a) among STs in ASU's undergraduate teacher preparation program and their counterparts in the postbaccalaureate teacher preparation program, (b) among CTs who had experience working with STs prior to the survey and those who did not, or (c) among USs at ASU and their counterparts at NAU. Collectively, the results of this set of analyses seem to suggest that it is the basic role an individual plays within the student teaching triad that is the major factor that shapes his or her perceptions of the roles and responsibilities of the US.

Finally, the results of a series of 2 × 3 ANOVA tests indicated that perceptions of the US's basic roles and responsibilities did not differ among those STs, CTs, and USs who worked in either elementary or secondary schools (alpha = .10). These results were unexpected and potentially noteworthy. The results of an earlier study in this series indicated that there were clear differences as well as similarities in perceptions of the CT's roles and responsibilities among teachers and STs who taught in elementary or secondary schools (Enz & Cook, 1993). It would, therefore, appear that the role expectations that the other members of the triad have for USs are likely to be more consistent across elementary and secondary school contexts than is true for CTs.

A Closer Look at the Three Domains of University Supervisor Responsibility

Although all three groups—CTs, USs, and STs—ranked the *mentor role* as the most important of the three general roles the US is expected to fulfill, STs were more likely to assign a higher number of points to this domain than members of either of the other two groups (means = 49.5, 46.7, and 43.3 points for STs, USs, and CTs, respectively). These results support the general view that the provision of guidance and support for the ST is the most fundamental of the three general domains of supervisor responsibility. Nevertheless, the three groups differed in their perceptions of the relative importance of some of the specific role functions within this domain. For example, STs assigned more points to the roles of providing seminars and evaluating the quality of the student teacher's lesson plans than members of either of the other two groups. And, relative to STs and CTs, USs assigned more points to observing student teacher's lessons and providing feedback (the specific function that was ranked as most important overall) and less points to offering student teaching seminars.

The magnitude of variations in perceptions of the relative importance of providing student teaching seminars ranks as one of the most striking findings of this study. According to the results of a recent study (Enz & Cook, 1993), STs are likely to view seminars as beneficial if they focus on information regarding practical matters such as student discipline and management or parent-teacher conferences. On the other hand, when seminars simply reiterate theory or feature only "complaint therapy," STs are likely to view them as "time wasting and useless." When one considers the fact that the sample of STs in this study probably included individuals who were required to attend seminars of the latter type and who would, therefore, be likely to view these activities with some disdain, the finding that the number of points student teachers assigned to student teaching seminars was, on average, nearly twice that of USs (means = 10.54 and 5.35) suggests that some USs probably should take this activity more seriously.

The *interpreter role* is the other general domain of responsibility that may be viewed as a traditional role of the US. All of the sources we considered when developing the supervisor functions survey acknowledged the supervisor's roles as institutional representative and as mediator between the schools and the university. It came as no surprise, therefore, that all three groups ranked this domain as second in importance among the three general domains of responsibility (see the qualification of this claim below). Likewise, all agreed that the function "facilitate feedback conferences regularly between student teacher, cooperating teacher, and university supervisor" was the most critical of the specific roles within this general domain. The only significant variations in perceptions of the relative importance of specific role functions within this domain involved the roles of (a) providing a direct link to the university and college and (b) determining the cooperating teacher's instructional and management styles. The mean number of points STs assigned to the first of these functions was somewhat lower than the corresponding means for CTs and USs; the opposite order occurred for the second function.

One of the survey items in this domain, "mediate personality conflicts between cooperating teacher and student teacher, if necessary," prompted a number of unsolicited written comments from survey participants. The general message conveyed in most of these comments is illustrated in the following statement by a veteran university supervisor: "When conflict does occur [between the other two members of the triad], this item becomes the whole and total focus of my job as supervisor. Nothing else will matter unless I resolved the problem."

The *professional resource* role is often overlooked in portrayals of the central functions of the student teaching supervisor, and it was ranked as least important overall by both STs and USs. In contrast, CTs ranked this domain as more significant than the interpreter role (when the difference in the number of specific roles within each of these domains is taken into account) and assigned more points to this domain than did either STs or USs. Serving as a CT for the first time is a complex and ambiguous undertaking for even the most experienced teachers. In light of this complexity, some authors have argued that actions such as providing collegial support for supervising teachers and modeling clinical supervision techniques may be the college supervisor's most significant contribution to the student teaching experience (e.g., Borko & Mayfield, 1993).

Another source of evidence supporting the claim that this role domain should be viewed as central to the US's primary roles and responsibilities is provided by unsolicited written comments we have received on formal evaluations of USs' performance. It is not uncommon for cooperating teachers to write positive comments on these evaluation forms, for example, "I appreciated being treated as a colleague," or "She provided me a great deal of information and reasonable expectations for my student teacher." CTs have also written critical comments, for example, "He never spoke with me privately about my opinions and only once conferenced with both of us." A US's failure to address this domain of responsibility, therefore, may contribute to the sense of wariness and distrust that sometimes prevails among CTs and USs (see Cope, 1973).

Consideration of this domain also suggests that USs must work with two types of learners, not one. The significance of the US's responsibilities within the professional resource domain, therefore, should be considered when faculty assignments and workloads are established, particularly in those situations in which a US is asked to work with a relatively large number of inexperienced CTs.

Mismatches in Perceptions

As noted earlier, the most important implications suggested by the results of this study center on mismatches in perceptions of the relative importance of US roles and functions among the three members of the student teaching triad. According to the data summarized in Table 7.3, the three members of the student teaching triad—STs, CTs, and USs—differed in the relative levels of importance they attributed to 2 of the 3 general domains of supervisor responsibility and 7 of the 14 specific role functions that were cited in the survey instrument.

In reviewing these mismatches, it is important to recognize that the significant differences in perceptions that are summarized in Table 7.3 were derived from group means. These results are, therefore, likely to underestimate the magnitude of differences in perceptions that could occur among the three members of a given student teaching triad. It is also important to recognize that the three groups differed in their perceptions of some of the most central roles and responsibilities of the US (e.g., observing student teacher lessons and providing feedback) as well as specific role functions that some might view as less critical (e.g., providing collegial support and encouragement to the cooperating teacher).

Guyton and McIntyre (1990) have argued that interpersonal problems within a student teaching triad are indications of a failure on the part of one or more members to satisfy the implicit expectations of others. The mismatches in perceptions identified in this study lend credence to that conjecture and reinforce Guyton and McIntyre's contention that members of each student teaching triad need to develop explicit, shared understandings of the roles and functions of each member, including the US. In addition to written job descriptions regarding the US's functions, steps should be taken to ensure that all members of a given triad have an opportunity to discuss their individual needs and expectations and to establish a common understanding of the roles and responsibilities the US will assume within that specific context. An instrument such as the *ASU University Supervisor Functions Survey* might provide a useful vehicle for facilitating this dialogue.

Yee (1967) and other researchers cited in the introduction have shown that the resolution of differences in perspectives prior to the beginning of the student teaching experience is likely to circumvent major problems or tensions in interpersonal relationships within the triad. And this dialogue may also provide a clearer sense of direction for both the US and the CT regarding the most promising ways to address the unique needs of the ST. Attempts to clarify the roles and functions of the US may thereby enhance the efficacy of the student teaching experience in building student teachers' confidence and competence in teaching.

Note

1. The terms *student teaching supervisors* and *university supervisors* will be used interchangeably throughout this chapter.

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Processes: Reflections and Implications

Gary P. DeBolt

The Three Studies

The three chapters in this division of the yearbook report research studies dealing with processes at various stages in the development of teachers. Each study deals with one part of the experiences involved in becoming a teacher. Metcalf and Kahlich examine the types of on-campus experiences that might be considered as alternatives or supplements to some field-based experiences that have expanded so rapidly in most teacher education programs in recent years. Ponticell and Zepeda look carefully at the issues faced by a first-year teacher and the role played by a skilled mentor teacher who used problem-solving strategies to help his new colleague to succeed. Finally, Enz, Freeman, and Wallin focus on the perceptions of roles and responsibilities of those directly involved in the student teaching triad. These three important studies together serve to provide a broader view of the overall process of what it means to become a teacher. Let us consider each chapter in terms of its implications for the overall development of teachers, especially as the chapter relates to possibilities for the growth of teacher *competence*, teacher *performance*, and teacher *effectiveness*.

Laboratory Experiences as Transition From Campus to Field

Metcalf and Kahlich provide a historical look at the dramatic increase in the field-based portion of many teacher education programs over the past 25 years. They note three serious problems related to the increase: (a) it may negatively affect students' attitudes, knowledge, and classroom practice; (b) it has resulted in saturation of school sites and increasingly heavier supervisory loads; and (c) many teacher education programs are not able to provide meaningful experiences with diverse student populations at a time when the call for such experience is strong. Through use of meta-analytic techniques, Metcalf and Kahlich looked for evidence to support the hypothesis that some forms of laboratory or on-campus experiences might be as or more effective than some field-based experiences. They have provided useful clarifying definitions of clinical, laboratory, and field experiences. It is worthy to note that the most effective experiences are those that allow students to engage in "the five clinical decisions":

1. to evaluate the current state of a subject or environment;
2. if a problem exists, to generate and weigh alternative solutions;
3. to prepare a plan for implementing the most desirable alternative;
4. to enact an alternative; and
5. to observe and evaluate the results.

Metcalf and Kahlich further argue that laboratory experiences can be highly effective in the preparation of teachers. They suggest that certain types of laboratory experiences can be useful in producing substantial improvements in teachers' instructional behavior and knowledge of pedagogy, content, and learners. Laboratory experiences appear to promote concurrently positive changes in teacher behavior, affect, and understanding. To the contrary, they argue that there does not yet exist a substantial body of evidence to support the effectiveness of the widely used field experiences or the new types of on-campus experiences such as the use of case studies. This is not to say that these experiences are not effective but that there is a real need for further research in this area.

Metcalf and Kahlich conclude that the effect of laboratory experiences is enhanced when some work with natural learners is included in the experiences of preservice teachers. They suggest that the effect is more powerful when simulated, on-campus experiences precede and follow the work with natural learners. Their analysis of the research base leads to the conclusion that we must provide more research-based evidence that evaluates all of the various forms of experiences prior to student teaching. It may be helpful, as they point out, to consider these experiences not as ends in themselves but as ways of anchoring and enhancing course-based instruction. Metcalf and Kahlich's conclusion is a powerful call to look at the evidence presented in their study that supports the belief that well-conceptualized laboratory experiences "are superior to extensive and extended field-based experiences currently in vogue."

Metcalf and Kahlich's study raises many important questions about the quality of early field-based experiences in teacher education programs today. The rapid increase in the field-based component, coupled with large enrollments in teacher education programs across the country, has led to a saturation of placements in the schools. This situation is further complicated, at least in New York, by the many reform movements operating in (or on) the schools. Teachers are increasingly asked to serve on committee after committee. In addition, many teachers feel overwhelmed by the movement toward inclusion that places more demands on their time and energy. We are increasingly seeing teachers who are refusing to work with preservice education students. When teachers feel inundated with demands, is it any wonder that they say no to field experience students?

Perhaps an example of what has recently happened in New York State will reinforce Metcalf and Kahlich's concern with this saturation issue. In September 1993, New York State changed the requirements for teacher certification for prekindergarten to 6th grade and also for 7th through 12th grades. As of that date, state-approved teacher education programs were required to provide two separate student teaching experiences for each of their students. Prior to this time, only one experience had been required. This meant that an elementary education student had to have one experience in kindergarten through 2nd grade and another in 4th through 6th grades. Likewise, a secondary certification candidate was required to have one experience in 7th or 8th grade and one in 9th through 12th grades. For most of New York's approved programs, this, in effect, meant that their placement needs for student teaching doubled almost overnight. As Metcalf and Kahlich point out, there exists no research-based evidence that this increase will be more effective.

Another question raised by this study is the need to redesign, or at least reassess, our teacher education programs to systematically analyze the experiences provided for our students in terms of their effectiveness in helping the students to develop *competence* as defined by Mager (1992). If our goal is to facilitate the thoughtful development of our students, we would be well served to heed Metcalf and Kahlich's encouragement to provide "multiple, diverse experiences . . . in an organized series of instruction." We need to ensure that these experiences provide opportunities for the students to develop and refine the "body of knowledge, skills, and values appropriate to the work of teaching" (Mager, 1992, p. 6).

Finally, Metcalf and Kahlich's report raises the question of quality control for all early experiences in teacher education programs. We need excellent role models for our students. Teacher educators must model effective teaching. They must also take great care to ensure that all early experiences, whether on campus or in schools, are of the highest quality. All too often today, teacher education programs—faced with shrinking resources, high enrollments, and few options for field placements—take whatever they can get. This poses a danger for the very teachers-to-be whom we are trying to help develop.

Making Sense of Teaching and Learning: A Case Study of Mentor and Beginning Teacher Problem Solving

Ponticell and Zepeda present a well-written case study of a first-year teacher and the mentor who makes a difference in the development of a new teacher. This case study has several implications for teacher education. First, it provides evidence that preparation in an academic content area is not enough to make someone a teacher. As the authors point out, the academic experience in college can be a severe handicap for a new teacher in high school. The lecture method that has dominated college classrooms is not always a helpful model for a new teacher faced with a large class of high school students with varying degrees of motivation.

This case study explicates the needs of many new teachers. They need to see and experience connections between knowledge and practices related to subject, content, teaching, and learning. They need to develop strategies, such as the problem-solving approaches employed by the successful mentor, that can serve as vehicles for their individual construction and refinement of the knowledge, skills, and values appropriate to teaching (Mager, 1992). This serves as a good example of the development of teacher *effectiveness.*

In the case study, the new teacher was unfocused and clearly ineffective. Through "cognitive coaching" by his mentor, he was able to focus his planning and interaction with the students. This has to improve his *effectiveness* in terms of increasing his ability to accomplish intended outcomes as a result of his performance. This was enhanced by his development of more complex understanding of his work as a teacher.

Ponticell and Zepeda argue that "if we want beginning teachers who can recognize, anticipate, and solve classroom problems, we must *teach* *them* to do so both in teacher preparation programs and in school." Indeed, this is the main message of all three chapters in this section.

Roles and Responsibilities of the Student Teacher Supervisor: Matches and Mismatches in Perception

Enz, Freeman, and Wallin share their study to seek clarity regarding the roles and responsibilities of university supervisors of student teachers. Their large-scale, survey-based study reported the perceptions of the supervisors' functions from the point of view of the student teachers, the cooperating teachers, and the supervisors. They found that there was a consensus on the importance of the role of the supervisor to "observe student teachers' lessons and provide feedback" and "provide moral support and encouragement to the student teacher." They also report that there was no significant difference in perceptions held by elementary and secondary teachers involved in the survey. Furthermore, the research led to the conclusion that an often overlooked, yet important role of the supervisor is to provide "encouragement and professional support for cooperating teachers." In essence, this study reinforces Guyton and McIntyre's (1990) call for the need to develop explicit, shared understanding of the roles of each member of the student teacher triad.

The report by Enz et al. points out the need for teacher education programs to provide training in clinical supervision for all student teacher supervisors. This might be extended to call for specific training for all cooperating teachers. Supervisors or cooperating teachers who have no experience in their specific roles need to be prepared to assume such role functions. This call for training begs that we consider again here the issues raised in the discussion of Metcalf and Kahlich's study. At a time of saturation of available field placements, it is geometrically more difficult to call for cooperating teachers to undergo training.

In a similar vein, Enz et al. argue that when supervisors have to work with a large number of inexperienced cooperating teachers, their "responsibilities within the professional resource domain, therefore, should be considered when faculty assignments and workloads are established." This may well be true, but it will be a difficult sell on most university campuses.

Enz et al. make a strong case for the need to encourage open, early communication by the members of the student teaching triad. Each person needs to make his or her needs and expectations clear. Such open communication can do much to avoid breakdowns and problems as student teaching progresses.

These suggestions to have training for supervisors and cooperating teachers, who establish clear roles and expectations for themselves and the student teachers with whom they work, could be very helpful in promoting the student teachers' *performance*. Working together, the members of the student teaching triad could help the student teacher to express "the new teacher's *competence* through the enactment of the tasks of teaching in a particular context" (Mager, 1992, p. 17). Such collaborative support could go a long way toward enabling the student teacher to practice what has been learned previously in the context of a particular classroom.

From this study, we can see a need for a follow-up, or post-student teaching, study using the same instrument. The researchers had all participants complete the survey prior to student teaching. Given that a large number (382) of the cooperating teachers had no prior experience working with student teachers, it would seem of great value to know if their perceptions changed. Similarly, it would be of interest to know if, and/or how, the perceptions of the student teachers changed after completion of their experience. It might even be possible to set up a control group design to study the effectiveness of providing training in clinical supervision for new supervisors and cooperating teachers. This would answer Metcalf and Kahlich's call to develop research-based evidence for our decision making.

Where Do We Go From Here?

Teacher education must provide high-quality experiences at each step along the path to becoming a teacher. Part of the challenge is to look for ways to provide these high-quality experiences at a time when we are facing shrinking resources. College-based and school-based teacher educators must work collaboratively to ensure the positive development of promising new teachers.

Metcalf and Kahlich have raised issues related to our selection of early experiences in teacher education programs. If teacher education programs do not do a convincing job of documenting their effectiveness, there could be an increase in the number of public school-based teacher preparation or privately run programs (Roth, 1995).

The issues raised in Metcalf and Kahlich's study encourage us to examine how we make curricular decisions in education. Furthermore, others have called for a rethinking of teacher education programs. In a paper prepared for the National Congress on Teacher Education held in Washington, D.C., in November 1995, Mary Diez addressed the question: *Who Will Prepare the Next Generation of Teachers?* Diez offered a list of issues that need to be addressed by those who will prepare tomorrow's teachers. The challenges are as follows:

1. To understand the role of the teacher in society and the abilities needed to work effectively with all learners
2. To ground the preparation process in a conceptual framework that incorporates the knowledge bases for learner-centered education (including critical frameworks drawn from social, psychological, cultural and philosophical studies)
3. To provide an experiential, developmental process that is designed to develop the knowledge, dispositions, and performances required for effective practice (using, for example, the INTASC principles)
4. To create experiences that model the kind of learning environment we want the next generation of teachers to create for their students
5. To provide a broad range of experiences in schools that model effective practice with diverse populations
6. To use assessment as a learning tool to provide feedback to candidates and to develop in them habits of life-long reflection (Diez, 1995, pp. 16-18)

This set of issues clearly reinforces the points made in all three chapters in this section of the yearbook. If teacher education programs are rethought in accordance with these guidelines, then we should be able to expect teacher candidates with enhanced *competence, performance,* and *effectiveness.*

There continues to be a need for research to examine alternative models of experiences at all levels of teacher development. We need to examine what might be instead of just looking at what is (Guyton & McIntyre, 1990, p. 518).

Enz et al. encourage us to value clarity of roles and responsibilities and open lines of communication. They also call for the training of supervisors and cooperating teachers. As teacher education programs are collaboratively redesigned, it will be important to make sure that all parties involved in the broad, overall process are aware of the connections among the roles played by themselves and others. Professors must know what supervisors and cooperating teachers have been trained to do, and vice versa. There needs to exist a clear sense of the developmental nature of the process of becoming a teacher and the roles played by the many significant contributors to or supporters of the emerging teacher. Certainly, Metcalf and Kahlich's as well as Enz et al.'s studies point to this need to understand the complexity of the forces that can encourage, or stunt, the growth of a developing teacher. The process is ongoing and involves *competence, performance,* and *effectiveness* as dynamic subprocesses. These are critical issues at all stages of a teacher's development. These are just as central to the Ponticell and Zepeda case study. The new teacher and his original mentor had drastically different needs and expectations for their roles in their mentoring relationship. The successful mentor in their case study helps the new teacher to see that he was indeed capable of teaching effectively. This is a point that is often overlooked in mentoring and in the other stages of teacher development. Too often, teacher educators appear to believe that they have to "fix" the student, student teacher, or new teacher. This is mainly done by telling. The unsuccessful mentor in the case study is a good example of this.

There is an ancient idea of mentoring that can be found in the culture of the Iroquois Indians. In their account of the founding of the Iroquois Confederacy, Deganawidah (whose name is not spoken) acted as a mentor to Hiawatha. According to the story, Deganawidah did so by serving as a "mirror" in which Hiawatha saw reflected the goodness that existed within himself (Wallace, 1946). This metaphor of mentor-as-mirror depicts one person assisting another to realize his own worth and potential (DeBolt, 1992, p. 37). This should be a goal for all teachers and teacher educators.

As teacher educators reflect on curriculum, they would be well served to take Metcalf and Kahlich's suggestion seriously that preservice experiences may be most helpful when they allow the student to be involved in the five "clinical decisions." Such considerations may help us answer our question of how best to prepare tomorrow's teachers.

As we move toward the future, it should be helpful to consider Mager's (1992) broad perspective of what it means to become a teacher. His three concepts of teacher *competence,* teacher *performance,* and teacher *effectiveness* can serve as guideposts in our efforts to help prospective teachers to develop the knowledge, skills, and values that will enable them to function effectively to foster student learning in their classrooms. None of us, college-based or school-based teacher educators, can accomplish this alone. We must work together. As we do, we might do well to remember this Vietnamese proverb: "In Hell, people starve because their hands are chained to six-foot long chopsticks—too long to bring to their mouths. In Heaven, it is the same . . . but they feed each other."

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DIVISION III

Connecting Field Experiences Through Communication

COMMUNICATION: OVERVIEW AND FRAMEWORK

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Communication constitutes the essence of field experiences in education because it undergirds the formation of teaching and learning, translates emotions and perceptions into actions, and sets the stage for personal growth and professional development. Communication serves as the adhesive connecting what we understand about good teaching with the actual practice of good teaching. The study of field experiences in education, in turn, necessitates a focus on communication because communication is the sine qua non of teaching and learning.

Before introducing the chapters in Division III, a brief description of our approach to examining field experiences and communication is given. In this beginning section, "Communication: Overview and Framework," we will discuss theoretical foundations involving key assumptions about field experiences and effective communication. In the concluding section, "Communication: Reflections and Implications," our focus is on communication concepts that provide theoretical and practical relevance to improving field experiences in schools.

Both sections, overview/framework and reflections/implications, are designed to encourage the reader to constantly search for deeper meaning in communication regarding *vision and purpose issues* (What do I believe about education and about field experiences? What is the purpose of public schools? What basic beliefs about education guide my actions?); *practical issues* (So what? Why is this important? How can communication enhance field experience? Is this the best decision for students?); and *ethical issues* (Is this really true? Am I sending and receiving accurate messages? Am I ready to listen?).

Overview and Framework

Two metatheoretical issues about which educational theorists and practitioners must make assumptions include ontology (e.g., What is the basis of reality in field experiences?) and epistemology (e.g., How do we gain knowledge through field experiences?).

What Is the Basis of Reality in Field Experiences?

With respect to ontology, the norms of field experiences in teacher education are discussed briefly. Three factors that help educators minimize misunderstandings and often redefine "subjective" realities involve understanding (a) traditions of isolation in schools and colleges of education, (b) an individual rather than collective school focus, and (c) changing roles and working relationships in schools.

Traditions of Isolation. Schools are designed, unintentionally perhaps, to separate and isolate individuals rather than to consolidate and unify. For the most part, teachers work in isolation behind closed doors, with little interaction with their teacher and administrator colleagues. As a result, beginning teachers experience isolation in their field experiences.

In addition, beginning teachers experience norms of isolation in their formal teacher education programs at the university. Preservice teachers rarely observe faculty members together at university planning courses, teaching in teams, integrating the curriculum, and moving collectively toward a shared vision or purpose. For the most part, university faculty demonstrate by their actions the norms of isolation found in the majority of public schools.

Some conditions that keep educators apart include (a) physical organization of schools and colleges of education, (b) rewards for individual teaching and research rather than collective instruction and inquiry, (c) lack of experience in working together, (d) lack of trust and understanding, and (e) lack of interpersonal communication skills. Each condition reinforces isolation and blocks the development of collegial working relationships among educators.

Focus on the Individual, not on School Culture. As Goodlad (1994) reminds us: "A good school is conscious of its culture. A poor school virtually trips over itself each day, seemingly unaware of the nature and magnitude of its malaise" (p. 212). Field experiences should assume a holistic focus and seek to unfold and explain the school culture for beginning teachers.

Current practice in schools and colleges of education focuses on individual disciplines, separate curriculums, and fragmented teaching and learning. This fragmentation is often observed in professional relationships in schools and colleges and may be characterized as "parallel play" (Barth, 1986):

> Two three-year-olds are busily engaged in opposite corners of a sandbox. One has a shovel and a bucket; one has a rake and a hoe. At no time do they borrow each other's toys. Although in close proximity, and having much to offer each other, each works and plays pretty much in isolation. (p. 473)

For many years, parallel play has characterized the professional working relationships of educators. For example, school and university faculty attend conferences related to a particular discipline, discuss narrow, discipline-related topics at work, introduce themselves by discipline or role-specific titles (i.e., math teacher, language arts instructor, history teacher), and generally fail to see the bigger picture involving what they do (or do not do) and how it relates to a greater purpose or mission. Failure to see the bigger picture reduces effectiveness with students, because educators often work at cross-purposes, unconsciously canceling out individual efforts.

Also, a condition that makes people truly human involves the innate desire to find a greater purpose in one's life (Boyer, 1993). Seeing the big picture and understanding the relevance of one's job help fulfill that need. Without a clear picture of where individual reality and collective vision intersect, efforts at improving schools can dissolve into faddish and faulty anecdotes.

Changing Roles and Working Relationships. Traditional teaching and leadership roles in schools are changing (Bredeson, 1995; McIntyre & O'Hair, 1996). In the past, as emphasized earlier, teachers worked largely in isolation, rarely assumed leadership positions or participated in schoolwide decision making, and generally viewed their roles as individualistic and unconnected to a larger vision or purpose. Fortunately, many beginning teachers in the 1990s gradually will see a reconfirmed belief, renewed confidence, and expressive modeling of Dewey's participatory democracy in schools. Field experiences in restructuring and democratic schools will highlight teachers and principals who demonstrate collegiality through shared governance structures, common learning principles designed to value teamwork, and self- and school study enhancing educational thought and practice. Field experiences in these schools encourage beginning teachers to accept empowerment and to challenge traditional norms of teaching and learning. Characteristics of empowerment include giving up some personal autonomy to gain collective autonomy, reconceptualizing the principal-teacher relationship, and understanding influence and power issues in changing professional roles and relationships.

One of the most difficult and stressful aspects of teaching involves giving up some personal autonomy in order to accept collective autonomy. *Giving up* refers to voluntarily opening one's classroom door for others to observe, actively participate, provide feedback, and sometimes challenge. *Accepting* collective autonomy involves active participation in developing common learning principles that help focus schools on their primary mission while avoiding distractions, making schoolwide decisions involving teaching and learning, and modeling democracy in action for future citizens and beginning professionals. Unfortunately, although it is theoretically and intuitively sound, the practice of replacing individual control with collective, group control is difficult. Managing and reducing uncertainty and anxiety is crucial.

As educational reform movements affect local schools, principals and teachers are discovering that traditional leadership roles are changing. Traditional views of the principal's role as leader regard the principal as instigator and director of change (Hall, 1988; O'Hair, Bastian, Spaulding, Hartmeister, & Kohl, 1995) and/or monitor of teacher compliance through performance evaluations (Smith & Andrews, 1989). Traditionally, the commonly accepted practice was to assign schoolwide leadership roles to principals and classroom instructional leadership roles to teachers (Cuban, 1988). New leadership changes, often made in the name of democracy, emphasize empowering teachers.

One issue regarding empowerment that remains unresolved stems primarily from traditional perceptions of leadership that involve power concepts of directionality and influence. *Directionality* and *influence* refer to the leader guiding or pushing others toward a goal. Organizational scholars suggest that "the essence of leadership is found in a person's ability to move an organization from state A to state B, that is to a higher level of performance" (Hitt, 1988, p. 6) and that leadership is the exercise of significant and responsible influence (Sirotnik, 1995, p. 236). Perhaps the overriding ethical consideration is how leaders resolve their need for guiding others while respecting individual values and beliefs about education. How can teachers be empowered if principals and others ultimately feel that their job is to influence and direct teachers? Reitzug (1994) summarizes this ethical dilemma for principals: "Principals must address how to fulfill their responsibility for moving schools forward without imposing their way upon teachers and how to honor teacher beliefs while remaining true to their personal beliefs" (p. 305).

Teachers and teacher educators struggle with similar concerns involving beginning teachers' growth and development. Is the purpose of teacher education and inservice programs to direct (often to push) preservice and beginning teachers toward particular ways of acting? Conversely, are teachers and teacher educators shirking their duties if they do not strive to influence beginning professionals as they enter the teaching profession? How much direction is useful and appropriate? How much direction produces unhealthy dependency and recipe book mentality? An examination of how we gain knowledge during field experiences may enhance our responses to these questions.

How Do We Gain Knowledge Through Field Experiences?

With respect to epistemology, our interpretations of communication and external observations of our communication provide useful data for generating and testing theories and, more generally, understanding the world in which we live (Gudykunst & Hall, 1994, p. 227). As chapter authors explore communication and field experiences, one common thread connects the chapters and unifies the existence of a yearbook division titled "Connecting Field Experiences Through Communication." This commonality involves how one views communication. We, along with the chapter authors, do not view communication simply as a tool for discovering the world of schooling or even, more narrowly, for describing field experiences; instead, communication is viewed as how the social world of schools takes on form and makes sense. To understand field experiences, we must first understand this social world via communication.

Three core communication concepts help clarify and capture the flavor of changing teacher roles. They involve reducing uncertainty and anxiety, helping others assimilate into the school's organizational culture, and giving and receiving effective feedback. These concepts are discussed in depth in the reflections and implications section and serve as an organizing framework when examining the chapters to follow.

Three Chapters

The chapters address and extend the questions and concerns about communication and field experiences raised in this overview. If examined together, the chapters provide a useful guide for understanding field experiences and communication. Specifically, in Chapter 8, Wilkins-Canter examines cooperating teacher feedback or lack of feedback. She synthesizes the literature in this area and identifies key components of programs designed to enhance cooperating teacher feedback practices.

In Chapter 9, Jarchow, McKay, Powell, and Quinn discuss a multiple case study approach that focuses on four student teachers and how their perspectives of teaching culturally diverse students are transformed based on an international student teaching experience. These authors note that the student teachers voice limitations of their own cultural perspectives on student learning and demonstrate increasing cultural sensitivity.

Finally, in Chapter 10, Selke discusses the results of a 6-year longitudinal study involving a statewide school-university professional development network. Using a constructivist approach to practitioner empowerment, fundamental elements that facilitate communication between the university and schools are examined.

A Final Note

As readers analyze, interpret, and apply results of the following chapters, one final caution is voiced. Searching for universal themes in the following chapters may be misguided and unproductive. Instead, a sophisticated understanding of the context, culture, and local expectations is desirable. To illustrate this point, an example from Chen and Pearce (1991) is used:

> In your seaworthy but fragile sailboat, you are entering a harbor on the rocky New England coast for the first time and have no charts. Whom would you rather have in your crew: a person who knows all the mathematical relationships between the spin of the earth, the movement of the moon, and the rise and fall of the tides; or a person who has "local knowledge" of many harbors? (p. 21)

Perhaps what is most important is the ability to gain "local knowledge" about the different contexts and unique aspects of each chapter. As respondents, we promise to provide interpretations, syntheses, and evaluations of individual chapters while respecting the individual values, beliefs, and experiences unveiled by the authors.

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8 Providing Effective Cooperating Teacher Feedback

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ABSTRACT

Effective cooperating teacher feedback is a critical component of a successful student teaching experience. Unfortunately, few cooperating teachers are trained to provide specific feedback to their student teachers, and the lack of such communication is one of the most commonly reported problems among field experience students. Using weekly time logs, biweekly questionnaires, and midpoint and final conference interviews, the researcher identified current feedback practices of a purposively selected group of cooperating teachers and examined the congruence between the feedback reported by these teachers and their respective student teachers. This chapter synthesizes related research literature, reports and interprets the findings of the current study, and suggests programs to enhance cooperating teacher feedback practices.

Effective cooperating teacher feedback is a critical component of a successful student teaching experience. Unfortunately, few cooperating teachers are trained to provide specific feedback to their student teachers, and the lack of such communication is one of the most commonly reported problems among field experience students (Southall & King, 1979). Teacher educators need to identify what kind of communication takes place between a cooperating teacher and student teacher and assess whether that feedback is congruent with the student teacher's professional needs. Properly conducted, communication between the cooperating teacher and student teacher should focus on positive and constructive feedback that will optimize the novice teacher's professional growth. This approach can help student teachers not only to recognize strengths and weaknesses and reach short-term goals but also to set the stage for a lifetime of reflective practice. Using weekly time logs, biweekly questionnaires, and midpoint and final conference interviews, the researcher identified current feedback practices of a purposively selected group of cooperating teachers and their respective student teachers. This chapter will synthesize related research literature, report and interpret the findings of the current study, and suggest strategies to enhance cooperating teacher feedback practices.

Theoretical Framework

It is widely accepted by teacher educators that the quality of the student teaching experience can differ from one individual to another because of a variety of variables, many of which relate to the cooperating teacher's skill and experience (Berg, 1986; Morehead, Lyman, & Waters, 1988; Morehead & Waters, 1987). An important factor in determining the quality of the student teaching practicum is the ability of the cooperating teacher to communicate to the novice teacher both positive and constructive feedback that will optimize the student teacher's professional development. Although the university supervisor typically provides quality feedback to student teachers on a regular basis, it is the cooperating teacher who is most often identified by the student teacher as "the significant other" in terms of role development, personal support, and professional skills (Blank & Heathington, 1987; Karmos & Jacko, 1977). Cooperating teachers, however, are seldom trained to provide specific kinds of feedback to their student teachers, and little is known about the quantity, quality, or types of feedback generally shared with the student teacher by the cooperating teacher.

Certain cooperating teacher traits and skills have been identified as critical by researchers and teacher educators. Morehead and Waters (1987) assert that the cooperating teacher must have the ability to identify, articulate, and coach certain skills associated with effective teaching strategies and classroom management. Interpersonal communication skills (Morehead et al., 1988) and collegial environments (Goldhammer, Anderson, & Krajewski, 1993) also seem imperative if self-confidence, reduced anxiety, and changes in behaviors of the novice teacher are to occur. Morehead et al. (1988) contend that an essential component of quality supervision and feedback by the cooperating teacher involves effective communication skills.

Research studies and recommendations for practice describe effective feedback as that which is frequent, specific, relevant to the student teacher's needs, and delivered by a cooperating teacher trained in delivering feedback. Woolever (1985) and Blank and Heathington (1987) found that feedback needs to be frequent and delivered when practice and opportunity for improvement are available. Barnes and Edwards (1984) concluded that the most effective cooperating teachers were clearer and more specific in their communication. Although cooperating teachers are sometimes tentative about making negative or constructive comments, student teachers need specific feedback about their teaching (Morehead & Waters, 1987). Also, feedback should be relevant to the student teacher's needs (Acheson & Gall, 1993).

Research studies have indicated that cooperating teachers trained in supervisory skills provide significantly more feedback and promote more positive and collaborative internships than cooperating teachers who have not received training (Berg, 1986; Killian & McIntyre, 1987). Communication between the classroom teacher and student teacher is enhanced when the cooperating teacher receives training in providing specific feedback (Painter & Brown, 1979). Such training is not the rule, however, and most research about professional training programs reflects little significance given to preparing cooperating teachers to supervise and provide feedback to student teachers (Applegate & Lasley, 1982; Kingen, 1984; Research Committee of the National Field Directors' Forum, 1983).

Based on the findings above, the current study sought to investigate the nature and effectiveness of feedback given by cooperating teachers to student teachers. In particular, it sought to identify not only whether cooperating teachers were providing quality feedback but also whether that feedback was considered useful and appropriate by student teachers.

Methods

Three data collection instruments were used to triangulate the data: time logs, biweekly questionnaires, and interviews. Student teachers kept time logs regarding the quality and nature of feedback provided by their respective cooperating teachers and documented the nature of the feedback to the nearest quarter hour for every day of the week. The time logs requested data in five main categories: (a) frequency of feedback with the cooperating teacher planning and evaluating instruction, (b) the type of feedback topics discussed, (c) when feedback took place, (d) where feedback occurred, and (e) how many direct student contact hours were used by the student teacher. The weekly time logs were analyzed by totaling the number of quarter hours per week and converting the data into a line graph format.

Both cooperating teachers and student teachers completed a biweekly, open-ended questionnaire starting the third week of the practicum semester. The format of the questionnaire contained the same three items to determine to what extent responses remained the same or varied during the 16-week semester. The following items were included on the questionnaire:

1. Describe what you did during your feedback session(s). In what format (oral, written, or both) did you provide feedback?
2. Describe the feedback that you felt was the most beneficial and least beneficial.
3. How frequently was the feedback given? Under what conditions was the feedback provided?

Interviews were also conducted during the 8th and 16th weeks of the semester because they coincided with the regularly scheduled three-way midpoint and final conferences between the cooperating teachers, student teachers, and university supervisor. Each cooperating teacher and student teacher was interviewed individually rather than in his or her respective pair. The interviews followed a predetermined protocol of questions; however, additional questions were asked to extend or clarify comments made by the participants.

A three-stage process was used to analyze the questionnaires and interview transcripts. Data were gathered from the questionnaires by locating major themes, forming categories generated by themes, classifying data, and forming generalizations. Interviews were recorded, transcribed to print form, and analyzed by theme in the same manner as the questionnaire data.

Data Source

Through purposive sampling, one rural school district associated with the College of Education at a major research university in the Midwest was selected as the setting for this study. Six pairs of cooperating teachers and student teachers were selected to participate in the study from four of the seven schools in the district. These four schools were selected to acquire an equal number of paired cooperating teachers and student teachers at both the elementary and the secondary levels in 16-week placements. The decision to include cooperating teachers as well as student teachers as data sources was based on the assumption that both groups possessed knowledge of actual feedback behaviors and that they would cross-validate each other's perception of the way that feedback occurred.

Findings

The study yielded several findings related to the frequency, location, occurrence, content, method, and perception of feedback practices employed during the culminating practicum experience. Together, these findings provide insight about the nature of feedback practices employed by cooperating teachers with student teachers and suggest practices that may improve the processes involved.

Frequency of Feedback

Most feedback was provided on a "daily" basis. In only a few cases did cooperating teachers (4.8% of the responses) and student teachers (2.3% of the responses) report either giving or receiving feedback as few as three or four times a week. The duration of a typical feedback session was found to be 5 minutes or less. Feedback sessions lasting between 5 and 15 minutes or more than 15 minutes occurred less frequently. The participants reported that the length of a feedback session often depended on the topic(s) being discussed or the magnitude of a problem. Other factors that affected the length of feedback sessions included interruptions by people (students, teachers, parents, and principals) and cooperating teacher and student teacher responsibilities outside the school setting.

Conditions of Feedback

The participants reported that the most desirable time for feedback was during school (i.e., lunch time, break time, and while walking down the hallway) and after school. Most feedback actually took place, however, at the end of the school day. Feedback that occurred immediately after a lesson was less frequent. The three most common places where feedback occurred were classrooms, hallways, and the cafeteria. Participants, both cooperating teachers and student teachers, reported that holding feedback sessions in the classroom provided the best opportunity for privacy.

Content of Feedback

Findings about content indicated that the most frequently discussed feedback topics were discipline, instruction, and student concerns. Feedback about "discipline" centered on classroom and behavior management. Discussions about "instruction" focused on lesson plans, long-term planning, time management, and learning styles. The topic "student concerns" included feedback about student attitudes, student attendance, student motivation, and student personal problems.

Additional findings from the feedback sessions indicated that most questions repeatedly asked by student teachers "elicited cooperating teacher suggestions." For example, student teachers frequently asked, "What do you want me to do?" and "How would you have done it differently?" Most cooperating teacher responses to frequently asked questions by student teachers followed a pattern of "suggestions only." When this occurred, the cooperating teacher would provide at least one suggestion about a given issue: "This is what I've tried."

Method of Feedback

There was considerable agreement among the participants that feedback was typically provided both orally and in writing. What was described as written feedback, however, was not based on objective data collected through some type of observation technique. Rather, written feedback included thank you notes or cards, comments written on lesson plans, "little" handwritten notes passed to the student teacher while teaching, "little" notes left on the student teacher's desk, "little" written notes to remind cooperating teachers what to tell student teachers about a lesson, and midterm and final evaluations completed with the university supervisor. The word *little* was used repeatedly to describe the informal nature of written feedback. The data also indicated that written feedback alone was rarely a method of feedback employed by cooperating teachers.

Advantages and Disadvantages of Oral Feedback

The qualities of oral feedback subjects found advantageous included immediacy, ease of communication, spontaneity that caused openness and honesty, and nonverbal cues that contributed to shared understandings. One major disadvantage reported by the participants was that both cooperating teacher and student teacher might forget what took place during a particular teaching episode. The participants also felt that the absence of documentation for reference later in the semester, and misinterpretations caused by hurrying or not carefully considering the words that were used in oral discourse, could be disadvantageous in certain situations.

Advantages and Disadvantages of Written Feedback

The participants described the advantages of written feedback as structured, professional, critical, and able to be reread. On the other hand, they noted that its disadvantages included creating a delay in the delivery of feedback to the student teacher. The participants also speculated that because written feedback is not interactive, it could lead to miscommunication or misunderstanding.

Recommendations

The findings from this study about feedback given by cooperating teachers to student teachers suggest that communication does occur, but the quality of what is shared is more subjective than objective. Effective communication during student teaching is predicated on the ability of the cooperating teacher to provide feedback that is frequent, specific, continuous, and relevant to the novice teacher's needs. This study and others in the area of cooperating teacher feedback (Berg, 1986; Blank & Heathington, 1987; Killian & McIntyre, 1987; Morehead & Waters, 1987) suggest that the following recommendations may help improve the quality of communication shared with the novice teacher. These recommendations focus on how colleges of education, cooperating teachers, and student teachers can further encourage high-quality feedback practices.

- Colleges of education should provide professional development courses that train cooperating teachers in various supervisory techniques and skills that foster effective feedback with student teachers. Research about professional training programs has emphasized the importance and positive outcomes of preparing cooperating teachers to supervise and provide feedback to student teachers and preservice teachers (Applegate & Lasley, 1982; Kingen, 1984; Research Committee of the National Field Directors' Forum, 1983). In addition, colleges of education should encourage their university supervisors to continue to model and share supervisory techniques with cooperating teachers and encourage their use when working with student teachers.
- Cooperating teachers should continue to use a combination of oral and written feedback as well as employing a combination of informal and formal conferences with student teachers in sharing feedback about their teaching performance. In particular, cooperating teachers should provide written feedback based on objective observation data. Cooperating teachers should also try to spend more time sharing written feedback with their student teachers. This feedback should be discussed somewhere in the school building where interruptions are kept to a minimum. Finally, cooperating teachers should seek opportunities for supervisory training through a course or inservice program offered by the university or university supervisor.
- Student teachers should be encouraged to keep a journal of or take notes during feedback conferences so that their professional development could be documented and used for reflection. In addition, they should be encouraged to read the information often to look for recurring patterns and to develop personal development goals. They should also be encouraged to ask their cooperating teachers for more feedback and to initiate feedback conferences. University supervisors should provide student teachers with techniques that would facilitate these processes.

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9 Communicating Personal Constructs About Diverse Cultures: A Cross-Case Analysis of International Student Teaching

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ABSTRACT

This multiple case study research investigated the personal constructs that four international student teachers acquired about diverse cultures during their overseas student teaching experience. The student teachers spent approximately 15 weeks immersed in the local culture while completing their student teaching practicum. Journals were kept by the student teachers throughout their overseas experiences. We, as a cadre of researchers, reviewed the journal entries for themes of how the student teachers communicated their constructs about cultural diversity. Two themes that emerged from the findings were (a) communicating personal constructs about the sociocultural context of the host country and (b) communicating personal constructs about the school context of the host country. A set of working hypotheses and four implications for enhancing student teachers' awareness of cultural diversity and for preparing preservice teachers for contemporary classrooms were drawn. Results indicate that the international student teaching experience provides a valuable venue for developing sensitivity to cultural diversity.

> *In the process of being an overseas teacher, one may become immersed rather deeply in a very different culture. And frequently one discovers that the way he or she felt that things are "supposed to be" are not necessarily the way things, in fact, are. (Palmer, Cartford, deVargas, Trueman, & Reyes, 1980)*

From the early 1970s to the mid-1980s, the findings of the research community influenced the need for international experiences for preservice educators. International student teaching offers preservice students a unique opportunity to become aware of how cultural norms and values influence the social construction of classroom learning environments. More recently, the need to ensure that preservice and inservice teachers have a global perspective has been documented (Jarchow, 1993; Mahan & Stachowski, 1985, 1987, 1990; McKay & Young, 1993; Willis & Enloe, 1990). West (1985) lists 100 institutions in the United States that conduct student teaching programs in a total of 55 countries, with the dual purpose of preparing competent teachers and contributing to worldwide understanding. The literature also suggests that international teaching experiences for preservice educators result in an expanded worldview and increased professional competence (Barnhart, 1989; Wilson, 1993).

In a globalized and pluralistic society, we need to better understand how teacher preservice experiences, especially international student teaching, influence prospective teachers' perspectives, beliefs, and attitudes—what we call *personal constructs* in this chapter—toward cultural diversity in general and toward cultural diversity in schools in particular. Documentation of the ways preservice teachers' personal constructs regarding cultural diversity are influenced by the international student teaching experience will provide a lens through which to investigate international field experiences.

Purpose and Objectives

The overall purpose of this study was to explore how international student teaching experiences influenced selected student teachers' awareness of other cultures. To achieve this purpose, we examined how and what the student teachers communicated about these cultures through journals. An assumption we held relative to this purpose was that as student teachers communicated, in both written and verbal forms, about the international cultures of their student teaching experiences, they constructed a deeper and broader understanding of their host cultures.

From the purpose of this study, we generated two objectives that initially framed data collection and analysis. First, we sought to understand the influence of international student teaching on preservice teachers' ability to communicate information about a culture other than their own. Second, we explored how both sociocultural and school contexts of the student teachers' host countries influenced the cultural information that they communicated.

TABLE 9.1 International Student Teachers' Demographic Characteristics

Name	*John*	*Deborah*	*Mark*	*Sarah*
Gender	Male	Female	Male	Female
Age	26	24	23	22
Prior international experience	Visited Canada and Mexico	None	None	None
Major	Elementary	Elementary	Elementary	Secondary—physical education
Country	New Zealand	New Zealand	Ghana	New Zealand
International school setting	130 students K-5	300 students K-5	120 students K-8	300 students 10-12
International teaching assignment	16 5-year-olds	35 7- and 8-year-olds	12 5- and 6-year-olds	several secondary physical education classes
International home setting	Lived with a family	Lived in a private, small flat behind the home of a host family	Lived in a dormitory and later with a family	Lived with two women teachers from the host school
International community setting	Rural	Urban	Urban	Rural

Research Context and Participants

Unlike the research contexts of some studies that tend to be centralized in one school/classroom context or in one community context, the study at hand was international in scope. Specifically, the student teachers in this study completed their teaching experiences, which lasted approximately 15 weeks, in New Zealand and Ghana. Information related to these persons is shown in Table 9.1. John, Sarah, and Deborah completed their student teaching in New Zealand, and Mark completed his student teaching in Ghana. In Ghana, Mark had two separate assignments in the same school, and Sarah had two separate assignments in different schools. Although in different countries, all student teachers had similar living situations. They lived in dormitories or with families of the host country, and they were immersed in the local culture. This milieu provided them with ongoing opportunities to learn about the host culture and to learn the connection between the local culture and school. Teaching in host countries also provided student teachers with additional opportunities to become acquainted with parents, other teachers, and school administrators.

All four student teachers were keenly interested in international experiences, and all felt that student teaching abroad would enrich their perspective for teaching at home. For example, John, who grew up in the Midwest, felt that student teaching abroad would be invaluable for his future teaching career. In his application to do student teaching abroad, John wrote: "I am fascinated by diverse cultures and their people, and I look forward to learning much about the Maori people and all the people of New Zealand." Mark commented: "I would like to broaden my philosophy to include a worldview of education and how children learn. What better way to understand an international culture than to experience it firsthand."

Theoretical Perspective

To examine how international student teaching influenced preservice teachers' ability to communicate about diverse cultures, we drew from the theoretical perspectives of social constructivism (Goodson, 1990) and personal practical knowledge. The knowledge that international student teachers constructed during their overseas experiences provided them with theoretical perspectives about their teaching (Goodson, 1991; Kelly, 1963). Connelly and Clandinin (1988) give the name *personal practical knowledge* to these perspectives.

As international student teachers accrued meaningful overseas experiences with students, with host families, and with local communities, their personal practical knowledge about teaching in culturally diverse classrooms was refined, reconstructed, and expanded (Hunt, 1987; Zeichner & Melnick, 1993). When student teachers live and teach in communities and schools in their own countries, they are less likely to be in situations where they interact exclusively with cultures other than those with which they are already familiar. Consequently, they are less likely to be in alternative cultural contexts that test, and likely reconstruct, their personal beliefs, perspectives, and predispositions for teaching. International settings provide student teachers with ongoing opportunities to learn about another culture, to test the limitations of personal theories for teaching other cultures, and to deepen understanding about the influence of teachers' and students' cultural values on classroom instruction. In the constructivist terms of this study, international settings allow student teachers opportunities to acquire personal constructs for how culture influences classroom instruction.

Method

To explore the personal constructs that student teachers acquired about diverse cultures, we examined the personal journals that were kept by all student teachers throughout their overseas experiences. All student teachers agreed to maintain personal journals that they delivered to us by mail throughout their student teaching experiences. We also asked the student teachers to develop a summary report of their experiences, reflecting in their summaries on salient interactions with their schools and communities. We invited student teachers to write several times each week in their journals. We suggested that they write their personal impressions of school, community, and home life. We also encouraged the student teachers to write spontaneously and honestly, recording their thoughts, feelings, beliefs, and changing perspectives. Like the journals maintained by teachers in the study reported by Cole and Knowles (1992), the student teachers in this study used their journals to chronicle events as they happened; to record impressions, thoughts, and reactions to events and experiences; and to write about their struggles with the local setting. Kept this way, the journals provided us with a means to examine the growing awareness that student teachers attained of themselves as cultural beings and of how culture influences classroom instruction.

The length and consistency of journal entries varied for the student teachers. Yet, all student teachers maintained detailed, lengthy accounts of their experiences. Approximately 300 pages of journals were ultimately analyzed. Using these accounts as our primary data source, we explored each journal individually, then explored them collectively. As we reviewed the journals, we, as researchers, maintained a record of our personal impressions and thoughts. As a group, we then discussed our impressions of the journals; we collectively developed the format for reporting the results; and we also decided which implications for enhancing the cultural awareness of student teachers should be reported from those that emerged during our analysis.

To analyze the journals, we used a variation of the constant comparative method of data analysis suggested by Strauss (1987). Thus, we analyzed journals line by line, searching for themes of how the student teachers communicated their personal constructs about cultural diversity. After we individually developed themes from the journals, we collectively compared these themes to generate a set of shared themes. These shared themes represented the consensus of our research team about student teachers' communication of personal constructs about teaching diverse cultures. Developing these shared themes was a form of peer debriefing that Lincoln and Guba (1985) recommended for enhancing the credibility of data reporting.

Using this form of data analysis, the two major themes that emerged were (a) communicating personal constructs about the sociocultural context of the host country and (b) communicating personal constructs about the school context of the host country. From these two themes, we drew a set of working hypotheses that reflect the growth of awareness of cultural diversity that student teachers demonstrated throughout their international student teaching experience. From these working hypotheses, we generated four implications relative to preparing preservice teachers for multicultural classrooms. These implications are constructing global awareness, diminishing ethnocentrism, valuing differences, and comparing international educational systems.

Results

Discussed below are the two themes: sociocultural context and school context. We interpreted sociocultural context to reflect descriptions of the home and community that student teachers gave in terms of their interactions with host cultures. We interpreted school context to reflect the comments that the students made about the teachers, students, administrators, and curriculum. School context also included classroom and school climate. The data reported below support the notion that the students acquired powerful, personal constructs about cultural diversity.

Communicating Sociocultural Context

Working Hypothesis 1: International student teachers who exhibit an intrinsic desire to learn about other cultures begin with positive expectations.

As the student teachers began thinking about going to another country to complete their student teaching experience, each of them reported a strong interest in exploring other cultures. Prior to leaving their home country and immediately after arriving in their host country, this intrinsic desire became transformed into positive expectations that student teachers had for their upcoming experiences. John wrote: "I am looking forward to a great experience in New Zealand. I want to learn as much as possible by being friendly and open and willing to accept different ideas and to respect other people and their culture."

For Mark, completing student teaching meant more than only exploring another culture. This experience for him represented "going home" to his ancestral family. Mark noted:

> I'm going somewhere completely by myself to a place where I have no family or previously known friends. This is going to be one of the best trips of my life because it's my first trip to where my people came from. I'm going home. . . . When I stepped off the plane, I had a huge smile no one would have been able to remove.

Working Hypothesis 2: Student teachers develop a broader understanding for and appreciation of international settings when they become part of the host community culture.

Each of the student teachers in this study willingly became part of a host culture. This helped the student teachers acquire an appreciation for international experiences and provided them with a better understanding of their host cultures. Mark, for example, visited many Ghanaian homes. He noted: "I have been invited into their homes for tea as well as taken to the beach for a relaxing day. It is hard to express all the things you want to say when people are so kind to you."

Like Mark, Sarah had positive experiences when she became part of the host community culture. These experiences, which helped her connect more directly to New Zealand life, included going to nearby lakes with

New Zealand friends. She did rock climbing, rappelling, and kayaking with these same friends. Sarah also became part of a local volleyball team. In her journal, Sarah communicated:

> I've been asked to play on the Team Teachers Volleyball team in a tournament on the 26th. I took this invitation as quite a compliment since they are a very good team. We will play every Saturday until I leave for the States.

Working Hypothesis 3: Student teachers who interact positively with host families learn to value, respect, and affirm differences.

The student teachers in this study lived with host families while they completed their student teaching. As they wrote about these experiences in their journals, the student teachers reportedly learned to value cultural differences between them and their host families. Deborah, for example, appreciated the hospitality she received from her host family. Deborah wrote:

> It is a unique situation living with a host family. You learn so much about customs, habits, and just general life for New Zealanders. They are very gracious with their time, allowing me to go places with them, to eat meals with them, and to come in the house and visit with them at any time I desire. You really get to see their way of life with all this.

Like Deborah, John eventually became close to his host family. John noted:

> Helping the family's children with their paper route on Fridays made me feel like part of the family. I remember how at first I was trying to be especially polite. It took some time to get past that stage. We've now become closer and it keeps getting better every day.

Working Hypothesis 4: Student teachers who proactively observe and interact with another culture test their personal perspectives, construct new ones, and thereby deepen their understanding of cultural diversity.

Very early in his overseas experience, Mark made keen observations of the host culture. This challenged his moral assertions about cultural lifestyles.

> From day one, I have seen how people should be. Respect and courtesy are a way of life here. Almost every person I have met has been polite and helpful. You rarely see someone lose their "cool." People should be like this everywhere. For example, I was in a taxi when a woman got dropped off and paid the driver. We had already driven off when the driver noticed she overpaid. He put the car in reverse and gave her some of her money back. In the States, he would have taken the money and run.

Sarah's interactions with international students helped her gain an appreciation for more than one form of spoken English.

> Have learned a lot about the difference in culture. Even though they speak English, so much is still very different. I spent the lunch hour the other day talking with a group of girls; they all get so excited and all talk at once, that I just can't understand them.

For some student teachers, the initial reality of another culture gives rise to feelings of confusion and irritation. This was particularly salient for Mark, who noted:

> Alcohol is everywhere and consumed by many like water. Developmental planning is at a minimum. Houses are built anywhere without regards to roads, land stability, voltage necessity, and availability. There is no distribution of wealth; the rich have everything. . . . We went to the Liberian Refugee Camp. This was a disparaging scene of an uprooted people huddled into tents and haphazard houses. They were fleeing the civil war. . . . I've seen two dead bodies since my arrival—no explanation of how they died, no coroner to pick them up. One was covered with leaves; the other looked like it was thrown into the brush on the side of the road. Death is something the States has desensitized me to. But the fact that the bodies are just set on the road bugs me.

Communicating School Context

Working Hypothesis 5: International student teachers report concerns similar to their domestic counterparts.

The student teachers in this study experienced the same elation, disconcerting circumstances, and disappointments that are common among student teachers anywhere, as reported by Sarah:

> Made an appointment today with my Headmaster; he seems very nice. He told me all about the school and all its activities. I am so excited to go to school; it seems as if I should be a student, not a teacher. Hopefully, I will be able to help coach a few of the many sports offered here. . . .
>
> [*Two weeks later*] . . . My cooperating teacher has not been very helpful to me; he doesn't inform me of anything that is going on and never gives me the time of day. I am extremely frustrated right now; all I want is for somebody to tell me some information about what's going on. I've been asking questions, but these men are just being plain rude to me. They never tell me what we are doing in the classes and I'm just left up in the air to figure things out. In her new setting I observed Judith's last period class today. She does a real nice job of managing her class. She uses different types of voices, looks, etc. Tom is also very good with his classes. I've learned a lot from him.

Interactions with faculty members, with instructional materials, and with students provided the international student teachers in this study with opportunities to practice and assess their educational attitude, as reported by Mark:

> This school is very nice by Ghanaian standards. I miss some of the equipment and materials from home such as the photocopier, the laminating machine and the resource room. I also wish the library had more up to date books for the class to choose from. I don't want to make this school seem bad, though. The faculty is friendly, and the administrative support makes sure you have everything they have at their disposal. . . .
>
> [*After a few days*] Behavioral management is needed for this class because of outbursts and disruptions during lessons and centers. My cooperating teacher is upset by the fact that after six weeks I will assume full time student teaching. I felt as though I wasn't wanted in the class. All my lessons were expected to be administered just like hers. It's not a whole-language or literature based class at all.

> [*In his new setting*] My new cooperating teacher is very open towards student teaching and allowing me to use the methods and style that I think are most effective. She is also very knowledgeable on educational psychology and the whole-language approach. I am now in charge and I'm free to use alternative methods.

Working Hypothesis 6: As student teachers explore cultural differences among teachers and students throughout their student teaching experience, they construct an appreciation of cultural diversity.

All student teachers in this study recognized the individual differences among members of a single ethnic group. They became respectful of the accomplishments of members of another culture. As an example, Sarah noted:

> I've noticed the Maori kids are similar to the American Indian kids; some of them don't care to be here and need a lot of discipline; others are just fine. Some of the Maori kids are very lethargic at this school. Some are trying to improve and others just don't seem to care at all. Some really enjoy talking to me—they are proud of their culture.

Exploring cultural differences among teachers and students also enhanced the student teachers' personal and professional understanding of the school culture. John wrote:

> The attitude of expectation is key to whole language, and I see it being practiced daily; all students will learn to write, as it is expected students are more confident about reading and writing. The atmosphere at our school is positive and the teachers are very professional, but what really impresses me is how well the teachers relate to the students; respect towards the students is evident throughout the school.

As the student teachers began to understand and give meaning to the apparent cultural differences in their host schools, their assumptions about what should be taught were challenged. Deborah noted:

> Life at Hakunui Primary School is very different from life at schools in the States. It is a happy, fearless, open and secure

> environment where children enjoy being there and are anxious to learn. One large curriculum difference that I saw and *experienced* was in the area of outdoor education; it's a very important aspect of education. During the first nine weeks of school, we did Math, Reading, Language, Spelling and CAMP work. It was hard to get used to the fact that camp was so important, but it was treated with as much emphasis and importance as the other curriculum areas. I have to admit that sometimes I wondered if it was given too much emphasis. But, what I had to do was to start thinking of it as a subject, just as important to these people as Math and Reading. It is part of their nature. They are people who love to be outside in the bush.

Working Hypothesis 7: When student teachers recognize their own development as teachers, they become more aware of cultural influences on instruction.

An occurrence that Deborah had in the classroom, which related to teaching about Easter, helped her to become immediately aware of cultural influences on instruction. She noted:

> I had an interesting week the four days before Easter. I was given the Easter unit to do. I was directed to teach the actual Easter story, straight from the Bible. Since I am a Christian, one would think that I would have no problems with this unit. That was far from the truth. It was the most difficult thing that I did as far as teaching the entire semester. The kids presented so much negativity about the Easter story. They told me the first day that they did not believe in God or Jesus. They thought it was a stupid story and did not want to hear it. I was shocked. It was so hard for me to get past that. But, I watched how I presented it. I told them that they did not have to believe in the story; it was a part of history. Once I said this, they reacted so much better. They did a fabulous job on the activities that I had them do, and they seemed to enjoy the unit at the same time. I think it was all in the way that it needed to be presented to them. Although, I still do not believe that religion has a place in school. This may have been why I had such a difficult time teaching the lessons, because, in my mind, you're not supposed to teach religion in school. I couldn't get over the fact that it was alright to teach it there. It did turn out to be a successful unit.

Mark recognized the competencies of his own students and reflected on his ability to explain concepts to them: "Some kids here speak three languages. I wish I could. . . . I always think my explanations and directions could be clearer, but the kids understood and made some nice examples of symmetry."

The student teachers' abilities to reflect and learn from their cultural encounters clearly strengthened their teaching repertoire. John shared his satisfaction in participating in his students' learning experiences: "One of my favorite duties is teaching P.E. . . . I have my kids doing 10 pushups and the other teachers are quite impressed as I have as much fun as the kids by joining in."

Working Hypothesis 8: Student teachers who explore the multiple dimensions of schooling develop an appreciation for collegiality both within and across cultures.

The international student teaching experience, because of its total cultural immersion, offered various opportunities for student teachers to learn about collegiality. Sarah's love of sports and her willingness to become collegial provided her with such opportunities.

> Have been busy fund raising for volleyball. Today we sold American Hot Dogs and it was a very big success. We are planning to do it again two times next week. . . . The opening of the volleyball tournament this evening was quite a spectacular event. . . . I do enjoy the Maori singing. I had to kiss all these people that I didn't know. I guess that makes for a "warm" welcome. . . . My volleyball team said they'd pay my plane ticket back next year if I would come back and coach them.

Deborah joined the staff for tea time and planning. These experiences gave her a very real appreciation for collegiality.

> One thing that I've noticed concerning teaching is how much and how well the teachers work together. There are weekly team (syndicate) meetings. The teachers work together on planning, ideas, and strategies. They help each other out quite a bit, sharing ideas and activities. There is a certain amount of staff closeness that I saw that I don't think I've seen in other U.S. staffs. Morning tea time was incredible. Everyone is there. They all stop what they are doing and

> gather in the staff room to have 20 minutes of break. They all join in on the break. And not just teachers. The secretary was there, the principal, the teacher aides, and the custodial crew. I have never seen a gathering as such in U.S. schools, unless it was for a staff meeting.

Implications for Beginning Teachers

That our four student teachers constructed a deeper and broader understanding of their host cultures clearly emerged from their journals. The eight working hypotheses related to the sociocultural and school contexts account for a growth of personal and practical knowledge for the student teachers. Our research suggests four implications for enhancing beginning teachers' awareness of cultural diversity.

Constructing Multicultural Awareness

The four student teachers in this study, from interacting with and living in cultures other than their own, had a heightened awareness of not only the culture where they taught but also the limitations of their own cultural values for teaching students whose backgrounds and ethnicities differed from their own. Having this kind of awareness is crucial to helping meet the diverse needs of students in today's multicultural classrooms. This awareness for the student teachers in this study, however, did not occur in only a few weeks of interacting with another culture but occurred as the student teachers learned about other cultures. It also occurred as they thought critically about their student teaching and as they wrote constructively about their experiences in their journals. This written form of communication, which occurred regularly for approximately 15 weeks, helped the student teachers think carefully about cultural diversity as a lived experience.

Not every student teacher can complete international student teaching. Finances, logistics, and desire may interfere with such an opportunity. Yet, when student teachers have focused, ongoing, and thoughtful multicultural experiences during student teaching, they are able to develop multicultural awareness.

Diminishing Ethnocentrism

International student teachers often say of their experience, "It was the best experience of my life." Perhaps they do so because they begin to view their home culture as part of a global community. Sarah learned that all people are not alike and that persons must respect and treat each other well. Deborah returned knowing that children everywhere are more similar than they are different. She appreciated the keen desire to learn that her New Zealand children exhibited, and she valued the exciting and effective teachers with whom she worked. John acknowledged that his experience gave him the inner strength and self-confidence to take on new challenges. He left many special friends in New Zealand. Mark not only found his roots in Ghana but also valued, appreciated, and modeled the Ghanaian qualities of respect and courtesy.

Every student teacher has the potential to become more tolerant of diversity. Experiences such as international student teaching help student teachers confront their own ethnocentricity. Through these experiences, they are able to test their assumptions about diversity and ultimately to value and appreciate the diversity in contemporary schools.

Valuing Differences

The four student teachers in this study often wrote about the lifelong friendships made and how these friends helped them value the cultural differences they observed. The student teachers' focus was on people, ideas, and experiences. Sometimes the focus on people included insignificant events. The student teachers reported, "The host mother packed a daily lunch for me," or "My host family's TV viewing centered on shows unfamiliar to me." Experiences that ranged from taking a bucket bath to playing on the faculty rugby team to traveling with host families all influenced the student teachers' view of the new culture. Valuing differences was one of the results reflected in the journals, but even more evident were the ways the student teachers learned to honor diversity in others through thought and action.

Comparing International Educational Systems

The international student teachers in this study encountered different ways of doing things that challenged and informed their own preservice teacher training. Sarah learned about the organizational structure of New Zealand high schools and the physical education curriculum there. Mark discovered that the friendship of faculty and the support of the administration can do more to create a positive school culture than equipment and materials can. Through her discomfort in teaching a story from the

Bible, Deborah learned that the way a lesson is approached or presented can be as important as *what* is presented. John saw evidence of the power of teachers' "unconditional positive regard" toward students and experienced the joy of "joining" the students as they learned. When international student teachers become first-year teachers in U.S. school systems, they have the potential to enrich the lives of their students and fellow teachers with firsthand knowledge of schools in faraway places.

Conclusion

Liedtke (1994) writes,

> To learn about other cultures, their educational system and methodology, children and adults with diverse backgrounds and experiences, and to experience life in a different setting is essential for the educator who expects to have personal and professional growth beyond the norm. (p. 37)

We agree with Liedtke and further suggest that these same learnings are essential elements for teaching in today's culturally diverse classrooms. Schools and students in contemporary society have become truly global. This transition to a global society has brought about the unprecedented need for all teachers to acquire the kind of interpersonal skills that help them affirm, acknowledge, and build on the cultural strengths of their students. The results of this study illuminate the potential that international student teaching holds for preparing teachers to interface effectively with the cultural diversity they inevitably will encounter, if not immediately then at some point in their professional careers. The student teachers in this study transformed their perspective on teaching culturally diverse students, and they became aware of the limitations of their own cultural perspectives on student learning.

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10 Facilitating Schools-University Communication: A Constructivist Approach to Practitioner Empowerment

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ABSTRACT

The purpose of this study is to analyze quantitative and qualitative longitudinal data, accumulated during the 6 years since the inception of a statewide schools-university professional development network at a large midwestern teacher education institution, in search of key elements that facilitate communication between the campus and the classroom. Conclusions incorporate an annotated list of 10 elements essential to schools-university communication and the benefits to preservice teacher education students.

Background Perspectives

Since the initial calls for teacher education reform a decade ago (Carnegie Forum, 1986; Holmes Group, 1986), many models of schools-university partnerships have evolved. Collaborative partnerships between preK-12 schools and institutions of higher education have been identified as essential to a high-quality teacher preparation program (Association of Teacher Educators, 1991; Clemson, 1990; Griffin, 1986; McIntyre, 1994; Stallings & Kowalski, 1990). Studies have documented resulting benefits of school-university partnerships for preK-12 students (Wise et al., 1987), beginning teachers (Holmes Group, 1990), inservice practitioners (Selke & Kueter, 1994), and university faculty (Chambers & Olmstead, 1991). As a result, practitioners have come to be viewed as essential players in the drama of teacher education, partners in the conceptualization, planning, development, and delivery of teacher education (Renaissance Group, 1989).

In spring 1987, the University of Northern Iowa (UNI) responded to the challenge of restructuring teacher education with the implementation of several initiatives. Among them was the genesis of the UNI Teaching Associates Cadre Model, designed to involve school-based practitioners more directly in the preservice preparation of educators in UNI's statewide network of regional field sites administered through the Office of Student Field Experiences (OSFE).

As those who have experience in implementing change processes will attest, the decision to implement a new model of interaction, difficult as it may be to make, is easy compared with enactment of the implementation. The more people involved in a proposed change, the more challenging the transition from old to new. In the case of the UNI model, the change process would affect student teachers, field-based faculty, campus-based faculty, and hundreds of cooperating teachers, principals, and central office staff in the school districts that had working relationships with UNI.

To compound the challenge, the preexisting traditional model for UNI field experiences was working, and working quite well. Initial overtures related to innovation were met, on many fronts, with suggestions to leave well enough alone. The rationale for this advice can be summarized by the common, well-known rejoinder to initial attempts at change: "If it's not broken, don't fix it."

Despite the deceptively calm surface of student teaching delivery, underlying forces were at work to diminish the effectiveness of the preexisting model. Increasing numbers of student teachers compromised the effectiveness of resident professors in their attempts to provide close,

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personal clinical supervision. Despite the increase in numbers of student teachers, K-12 student numbers declined. An increasing number of education students competed for a diminishing number of teaching positions in Iowa's schools. Although the best prospects for employment were in large, urban districts in and outside of the state, many teacher education majors were ill-equipped to work in the cultures of large, urban schools.

Teaching associates cadre members in urban-based centers across the state are master teachers and experienced cooperating teachers who form professional partnerships with the professors and clinical supervisors based in the centers. Cadre members provide a linkage between schools and the university that functions as an avenue for communication and a direct line to contemporary, reality-based practice. The network was established with the objective of facilitating communication, reciprocal interaction, and collaboration between university faculty and practitioners to improve (a) the professional development of beginning teachers and (b) the professional development options open to experienced teachers.

Rather than a singular professional development partnership confined to providing professional practicum experiences at one or a limited number of school settings, a distinctive statewide network of professional development centers addresses developmental needs specific to preservice field experience students and inservice educators by blending elements of the teaching center and the professional development school. As in teaching centers, UNI students are assigned to regional centers under the guidance of a professor coordinator. As in professional development schools, professor coordinators collaborate with teaching associates cadre members, clinical supervisors, and cooperating teachers to solve problems associated with center-specific delivery of the UNI student teaching curriculum, to share some teaching responsibilities, to conduct collaborative research on the problems of educational practice related to preservice practicums, and to supervise prospective educators. A fundamental tenet of professional development school partnerships, that of striving to improve teaching and learning on the part of school and university students (Holmes Group, 1986), also underlies the UNI cadre model.

The model is unique in that it was not externally imposed, nor did it come with a preestablished, one-size-fits-all-centers job description. Cadre role development was approached from a constructivist perspective, which freed collaborative parties to derive meaning through personal and social experiences as the partnership evolved. The cadre model began only with a mission statement and no preset framework or guidelines for establishing a working partnership.

Data Gathering and Analysis

Longitudinal data collection has been carried out since the implementation of the cadre model in 1987. Personal interviews were conducted with each member of the statewide cadre population after the first 3 years of the model's enactment; biennial surveys have combined Likert scale measures and open-ended essay questions; and center coordinators submit annual cadre productivity reports that outline ongoing projects and innovations. The current study is designed to synthesize the data accumulated in the years since the inception of the model into a longitudinal perspective of the developmental stages of a statewide collaborative partnership; the purpose is to identify practices that have been helpful in the facilitation of communication between the campus and the classroom.

In an executive summary report to COE administrators following the cadre interviews at the end of the third year, Canning (1990) organized the common interaction processes reported by cadre groups across the state into six stages that had occurred during the first 3 years: searching, doing, sharing, clarifying, recognition, and renewing. The enactment of the UNI model will be discussed within the framework of Canning's six stages of reflective interactional development, followed by an analysis of the elements found to be successful in facilitating schools-university communication.

Data Source

Searching

The searching stage consists of initial floundering and collaborating on an agenda in an attempt to find meaningful work to do together. The overall mission of the UNI cadre model called for each of the newly aligned regional student teaching centers to develop a plan for a collaborative schools-university partnership with the objective of increasing practitioner input and involvement with the university through its field experience network. Professor coordinators in each center interviewed and initially selected five enthusiastic cadre members who were charged with the mission by an equally enthusiastic COE dean.

Within a short time, the excitement of being newly chosen diminished. Cadre members were eager to get to work but began to feel uncomfortable when they realized they weren't sure what their work was to entail. The dean's phone began to ring. "What, exactly, are we to *do*?" the caller would ask. "What do you *want* to do?" the dean would respond (Canning, 1990).

A basic framework was in place, based upon a searching stage limited to the implicit involvement of many of the parties crucial to the model's enactment. Now it was crucial that cadres in each center go through the process of defining center-specific roles and responsibilities.

Doing

At this point, cadre members had reached what Canning (1990) called the doing stage wherein cadre members started with simple projects, experienced some initial successes that fueled the empowerment of the practicing teachers, and began to get things done. This is difficult enough with a clear job description. Cadre members were seeking to establish linkages without the benefit of role models, simply because what they were attempting to do had never been done before. In search of creativity rather than compliance, the COE and OSFE administrators, as well as coordinator-professors in the regional centers, encouraged lots and suggested little.

In late winter 1990, professor coordinators working in the Office of Student Field Experiences collaborated on a plan to interview each cadre group in each center to find out how the cadre concept was being enacted in each center. Participants were asked how their cadre had developed, what concerns had arisen over the first 2 years of the model's implementation, and how they would describe the experience of initiating schools-university partnerships from each center-specific perspective. As one cadre member expressed it, "We kept waiting for the University to tell us what to do. . . . I can see now that no one could tell us. We had to figure it out for ourselves. It was the best thing that happened in our first year!" Another added, "I hope we never entirely lose that sense of floundering. It means we are being creative. It's a sign that we're alive!" (Canning, 1990).

Sharing

In 1990, 3 years after the implementation of the model, cadres across the state were confident enough in their own center-specific implementations of the partnership model to share their ideas with other cadre members. Grant funding was obtained to hold the first UNI Cadre Conference at the University of Northern Iowa. Cadre members came to the campus for 2 days of interaction, reflection, and meetings with methods faculty. At this conference and at the second UNI Cadre Conference in 1991, cadre members spoke in methods classes, arranged to participate in subsequent on-campus panels and projects, and traded ideas with cadre members from around the state.

The third UNI Cadre Conference was held in October 1993. This conference featured a keynote speaker to address the action research component that had always been a part of the UNI student teaching curriculum and has been applied to cadre projects by cadres around the state. Cadre conference participants attended an original one-act play about the roles and concerns of those involved in the student teaching process, written by a group of cadre members using results of a statewide survey of cadre members, cooperating teachers, administrators, student teachers, and university faculty. Cadre members, clinical supervisors, coordinators, and campus-based faculty led break-out sessions on topics for and about cadre members. Brainstorming sessions were held to encourage participants to envision new directions for teacher education. To facilitate networking, conference participants were provided with folders containing contact information for all UNI cadre members and center profiles that outlined the implementations taking place in the respective centers.

Clarifying

In the fourth stage of Canning's (1990) interaction process model, participants manage any confusion that arises and further develop center-specific missions as activities and site-based practices evolve. By the time of the third cadre conference in 1993, profile sheets did indicate changes in the original structure of some cadres to conform to center-specific needs.

Some cadres had grown from 5 to almost 20, allowing for a cadre member in each field-site building. Another change involved usage of stipend funds. The original model called for five cadre members from each regional center, each of whom was to be paid a stipend of $500 per year, to be identified by the resident professor-coordinator in each regional center. Although some cadre members were still limited to five members and continued to receive the amount as an annual salary, other cadre groups were much larger and tended to pool the money allocated for their center, using it for cadre activities or professional development opportunities in their center.

Profile sheets also indicated that participants in each center were indeed engaged in "partnerships that improve teaching and learning on the part of their respective students" (Holmes Group, 1986, p. 5). All cadres reported ongoing projects designed to facilitate communication within their respective centers and with UNI faculty. Among the many activities reported were socials for student teachers and cooperating teachers, breakfast meetings for cooperating teachers and prospective cooperating teachers, receptions, local and national conference presentations, and cadre newsletters.

Because the campus is expanded throughout the state and beyond through the network of professional development centers, all cadre members across the state assist with topical presentations at student teaching seminars. At two of the centers, cadre members assist the resident professor in conducting orientation workshops for cooperating teachers.

In keeping with the element of reciprocity central to the UNI model, professors are also engaged in teaching activities at the preK-12 level. The State of Iowa recently implemented legislation requiring teacher educators to spend at least 40 hours every 5 years teaching or team teaching in a preK-12 setting, under the guidance of an experienced classroom teacher. Cadre members have indicated an active willingness to assist campus-based faculty in this endeavor.

Collaborative research on problems of educational practice has also come alive in the UNI model. Resident professor-coordinators and clinical supervisors have served regional centers as consultants and resources for university contacts and materials. Practitioners in turn have engaged in a variety of projects, such as developing a Beginning Teacher Idea Book, training student teachers in the use of computerized grade books, and developing a Resource Center for the use of student teachers and their cooperating teachers.

Perhaps the most important common function of the cadre members from the viewpoint of student teachers and pre-student teaching field experience students is that of acting as mentors to preservice education students. Because they possess on-site knowledge of school cultures and direct connections to professor-coordinators but do not have evaluation responsibilities for all preservice practicum students, cadre teachers are in an ideal position to act as sounding boards, mediators, problem solvers, and communication enhancers in the regional centers. In one center, cadre members lead formal support groups during student teaching.

Cadre members may also have an opportunity to put communication skills to work as they assist center coordinators by writing introductory and follow-up letters to cooperating teachers and student teachers, contributing to exit interviews, coaching student teachers in job-seeking skills, assisting with the recruitment of cooperating teachers, and assisting students from other parts of the state in finding housing for the duration of their student teaching experience.

Some cadres take on a more extensive role. For example, in one of the centers, cadre members have voluntarily taken on responsibility for the placement and supervision of pre-student teaching practicum students in their buildings.

Results

Recognition

Recognition, which involves feedback from participants, is the fifth step of Canning's (1990) model. The first comprehensive assessment of the UNI cadre model consisted of cadre group interviews, conducted in 1990, which sought to discern common interaction patterns experienced as cadres around the state went through the constructivist process of developing role concepts and enacting roles in ways that facilitated schools-campus communication and addressed the needs of preservice and inservice teachers in each regional center.

The next statewide assessment procedure was a mail survey, conducted in late spring/early summer 1993. Short surveys were sent to all 70 cadre members; 37 were completed and forwarded to UNI, resulting in a return rate of 53%. Survey questions explored elements of participation, elicited concerns, and sought out strengths on which to build. Responses to the first question related to perceived professional benefits of the cadre model are found in Table 10.1.

Analysis of responses by individual centers revealed that a great deal of variation could exist in the perceptions among members in the same center. Cadre members who indicated in question two on the survey that they found participation to be personally fulfilling were understandably more likely to find the participation experience professionally fulfilling as well.

Variation in the patterns of responses were also noticeable between centers. Cadres in which the developmental process had been compromised in some way accounted for all responses in the "poor" or "fair" categories. For example, new UNI leadership had been implemented in four of the regional centers during the year prior to the survey due to a combination of retirements and reassignments. In one instance, cadre members' responses reflected their reactions to sudden, uncontrollable, top-down change. In another center, cadre members were mired somewhere between the "doing"

TABLE 10.1 Spring/Summer 1993 Cadre Survey—Responses to Question 1: Did You Gain Professionally by Participation in Your Cadre?

Response Choices	*Frequency*	*Percentage*	*Cumulative Percentage*
No response	1	2.7	2.7
Excellent	12	32.4	35.1
Good	13	35.1	70.2
Average	4	10.9	81.1
Fair	5	13.5	94.6
Poor	2	5.4	100.0
	$n = 37$	100.0	

and "sharing" stages of the Canning model. Years of top-down school administration had taken its toll to the point that educators found it easier to complain when nothing was happening than to take charge of their professional lives and make things happen themselves. A frustrated cadre member in this regional center responded to a narrative question about personal goals for the cadre in the upcoming school year with the comment, "How should I know? UNI still doesn't know"—completely missing the point of a constructivist approach and oblivious to the ongoing change and renewal taking place in other cadres around the state.

Additional narrative responses to the survey made it very clear that cadre members do not choose to take on the role because of token sums of money. They become involved in cadre activities for the purpose of "giving something back" to teacher education and working within the system to improve it for teachers who will come after them.

Interaction with campus-based faculty members is necessary if this is to be accomplished, and such interaction was an entry expectation of most cadre members. Another question in the cadre survey asked cadre members if they had had a chance to visit with UNI faculty in the past year. Even in centers where cadre members expressed an appreciation of and affinity for their university coordinator, perceived efficacy of cadre members was found to be related to the amount of involvement with campus-based professors. This is indicated in the following cross-tabulation table, which compares the responses of cadre members who engaged in interaction with campus-based faculty with responses of cadre members who either did not have the opportunity to do so or did not avail themselves of the opportunity.

TABLE 10.2 Spring/Summer 1993 Cadre Survey—Cross-Tabulation: "Did You Have an Opportunity to Visit with UNI Faculty?" by "Did You Gain Professionally by Participation in Your Cadre?

Professional Gain?	*Did Have Opportunity to Visit: Yes*	*Did Not Have Opportunity to Visit: No*
No response	—	1
Excellent	6	6
Good	3	10
Average	—	4
Fair	—	5
Poor	1	1

Renewing

Canning (1990) describes the sixth and final stage of the reflective interactional process—renewing—as a chance to develop new projects based in a comprehensive understanding of one's role, which engenders enhanced personal and professional self-concept. In 1993, 6 years after the implementation of the UNI cadre model, the identity of most cadres had been school district or regional center based. Members have constructed role identities around activities designed to provide assistance to student teachers, practicum students, and cooperating teachers. This identity is crucial but it cannot exist in a vacuum if the cadre model is to live up to its full potential for schools-university communication and preservice/inservice practitioner empowerment in a more global perspective. Next steps in addition to continual renewal within each center include expanded cross-cadre communication assisted by university-sponsored e-mail and ICN connectivity, and disseminating information about the model with other teacher education institutions through local and national forums.

Conclusions

What have we at UNI learned about facilitating schools-university communication as a result of implementing our cadre model? Consider the following "top ten" list of crucial elements:

1. *Identify a fundamental belief in practitioner capability* on the part of field-based administration and faculty as well as university administration and faculty that extends beyond the traditional top-down cooperating teacher role. The constructivist approach would not have been effective if the initial months of experimentation and admitted floundering had been met with the response: "Well, we gave them a chance and nothing's happening so we'll go in and structure it for them."
2. *Build a team of field-based professor coordinators committed to active practitioner involvement and the cadre mission* who are well connected in the field and at the university or have support personnel to assist them in establishing such contacts. This discourages a critical mass of activity and expertise on either end without the reciprocity essential to communication.
3. *Build an initial team of faculty and administrators on both ends of the communication line who are willing to take initiative* for pursuing avenues of communication. Success demonstrated by professionals who are ready to take a risk and attempt initial change can be a powerful incentive for the initially reluctant to become actively involved in reaping the benefits of schools-university communication and collaboration.
4. *Ensure willingness to fully assess problem areas* before expending resources of time and money to solve problems. Such assessment includes gathering input from everyone affected by the problem. For example, a short survey of student teacher technology needs demonstrated a lack of software and training rather than of funding for hardware to take into the field, which wasn't needed because it was available in placement site schools; this saved the university money and the students frustration.
5. *Use whatever technological means are available* to enhance communication. This may include everything from a simple direct-dial phone line into a center-based professor's office or more creative options: 800 numbers, e-mail, Internet, ICN transmissions. Ongoing support for technological communication options is as important, if not more important, than initial funding or equipment.
6. *Technological communication cannot substitute entirely for face-to-face communication* with other participants on both sides of the communication line. Within the center, opportunities for student teachers and practicum students to interact directly with peers and for cooperating teachers to meet and interact with each other were crucial. Opportunities such as the cadre conferences mentioned previously and professional travel allow collaborating parties to meet and communicate more intensely for longer periods.

7. *Solicit formative feedback and assessment pertaining to effectiveness of communication* from a variety of formal instruments and from daily interaction with all participants in the communication process. For instance, faculty members present on campus when the cadre model was initiated were familiar with the cadre concept but informal conversation with faculty members hired since the initial year or two of the model's implementation indicated a need for education of new hires in regard to what cadre members do and what reciprocal benefits are possible.
8. *Keep stability in mind when considering position reassignments*: As facilitators of the cadre model in the regional centers, professor coordinators are key people in the communication process. Survey results indicated that a change in coordinators can trigger on-site communication challenges as cadre members and the new coordinator learn to work together. Even when the change proves to be a positive one, the change process consumes energy for everyone concerned. Pros and cons of personnel reassignments need to be carefully considered and provision must be made for as smooth a transition as possible.
9. *Remember to celebrate successes* and to keep everyone in the communication channel informed. Doing so promotes a sense of connection and collaborative celebration of the common mission.
10. *Find ways to reiterate the mutual benefits* of schools-university communication. In the case of the UNI cadre model, university personnel are provided with reality-based input into the teacher education program and readily available field sites. Cadre members are provided with an opportunity to "give something back" and make an impact on teacher education.

Implications for Beginning Teachers

Benefits for preservice educators also abound in an atmosphere of continuous, proactive schools-university communication. Advantages of the UNI cadre model to student teachers and field experience students include the following:

1. *Practitioners provide input at all levels of preservice professional education preparation.* Cadre members are guest presenters and panelists in methods classes, participate in ICN "teach-ins" from field sites, and serve on campus committees for curriculum design.

2. *Cadre members provide firsthand experience in current topics and concerns.* Although this is a component of most field experiences, the attention and coaching of cadre members raises the level of preservice students' perceptions from unconscious awareness to conscious awareness of concerns and agencies that provide assistance and support in the field.
3. *Cadre members provide personal mentoring.* Not all student teachers or field experience students find an ideal fit in the personality of their cooperating teachers. Cadre members, without responsibility for preservice teacher evaluation, may be a better personality match for some students and are in a unique position to counsel, assist with interpersonal communication, and alert the university coordinator to potential concerns.
4. *A team provides a safety net of support.* Rather than the single lifeline provided by a single cooperating teacher and a single university representative who visits in the field from time to time, student teachers and field experience students have the on-site, immediate support provided by a team of cooperating teachers, cadre members, and resident professor coordinators.
5. *Last, but perhaps most important, cadre members model a comprehensive perspective of what it means to be a professional educator.* It has been said that we teach best by example. In cadre members, student teachers and field experience students see professional educators whose commitment to the profession of teaching does not stop at the door to their classrooms but extends beyond it. Cadre member involvement facilitates communication between the schools and the university to strengthen the profession for the generations of teachers yet to come by taking a proactive role in their preparation.

As Koerner stated in 1992, cooperating teachers are no longer content to be silent partners in the student teaching process. They welcome opportunities to affect teacher education and ways to collaborate with other educators to improve teaching and learning for themselves, their students, and the next generation of educators (Koerner, 1992; Murphy, 1990). Implementation of the UNI cadre model has resulted in improved field experiences for students and practitioner empowerment through enhanced reality-based transfer of pedagogical theory into contemporary practice and enhanced reciprocity in schools-university communication.

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Communication: Reflections and Implications

Dan O'Hair

Mary John O'Hair

I have no desire for simplicity, since a world that theory could fully grasp and neatly explain would not, I suspect, be a pleasant place. (Walzer, 1992, p. 89)

The field experience is a complex interplay of ever-evolving interpersonal relationships. Teacher interns must not only manage relationships with their students but also negotiate meaningful relationships with their cooperating teachers and university supervisors. In addition to these primary relationships, the teacher intern will develop relationships with the host school's teachers, administrators, parents, and even community members. The management of these complex interpersonal relationships requires certain types of communication that may be unfamiliar or at least untried by teacher interns. Just as important are the relationships that the cooperating teachers, university supervisors, administrators, and students must manage as teacher interns become part of their professional lives.

What can we learn about these complex interpersonal relationships from these chapters? Are vision, practice, and ethics connections made in the chapters to help minimize misunderstandings and clarify messages? What might we learn about ourselves and about our practice as teacher educators? In this section on reflections and implications, we seek responses to the above questions. We agree with Walzer's concern for oversimplification and believe that to successfully participate in democratic schools, teacher interns must understand an often complex, imprecise, and uncertain world.

As described in the overview, the field of interpersonal communication offers three conceptual areas from which to draw both theoretical and practical implications in the field-based experience. *Uncertainty reduction, assimilation,* and *feedback* are presented as three viable, theoretical, and pragmatic concepts that facilitate and enhance interpersonal relationships within field experiences. Reflections developed from these communication concepts are spawned by the chapters appearing in this section. At appropriate times, specific applications of these communication concepts will be offered.

Uncertainty Reduction

Cultural understanding and sensitivity are critical in all communication contexts. Culture transcends national boundaries, racial differences, or geographical distinctions. Organizations contain cultures that must be recognized and respected for their members to communicate effectively. Assimilating into a culture or organization is most effective when the level of uncertainty about the context and situation can be reduced. This is particularly true within the field-based experience.

The type of information sought and obtained is important in reducing uncertainty. Miller and Steinberg (1975) established that three types of information are sought in interpersonal relationships: cultural, sociological, and psychological. *Cultural* information is not person-specific but involves data about roles, norms, language, and customs within the cultural milieu. From an international student teacher's perspective, this information is essential. This information, however, provides little in the way of actually developing relationships with other people. At the next level, *sociological* information provides data about the groups to which people belong, such as gender, status, race, disabilities, and even religion. This information is helpful in reducing uncertainty about another person but falls short of helping us actually know someone. It is at the psychological level that information can be helpful in reducing uncertainty about another person. *Psychological* information is data that is specific to a particular individual. It includes personal information about his or her personality, goals, ambitions, and, perhaps most important, his or her unique communication style.

Uncertainty reduction is best achieved by obtaining information about a person that is unique to that individual. Personal or idiosyncratic information reveals that person on a more intimate level. Uncertainty reduction allows the prediction of relational partners with more accuracy, which, in turn, builds trust, reduces isolation, and enhances relationship development even further. The more a person is understood, the more likely successful interpersonal communication can be realized.

Once sufficient information is learned about a communication partner, expectations and predictions will follow. Predictions determine what the partner will say and how he or she will react or feel in a particular situation. In the beginning stages of a relationship, partners will make predictions about one another and the relationship. The less uncertainty between the two, the more often their predictions will be correct. This reduces anxiety.

What is the value of uncertainty reduction in field experiences? As uncertainty is reduced, teacher interns begin to feel less anxious and more comfortable in their new setting, which, in turn, helps build interpersonal trust, reduces isolation and fear, and improves teaching and learning. Jarchow et al. remind us that as international student teachers accrued meaningful overseas experiences with students, with host families, and with local communities, their personal and practical knowledge about teaching in culturally diverse classrooms was refined, reconstructed, and expanded.

Is all uncertainty in relationships harmful? No, it is important to note that not all uncertainty is negative. Relationships would be rather boring if some uncertainty did not exist. As the Selke chapter indicates, some uncertainty is desirable and advantageous to strengthening relationships and to sharpening problem-solving skills. In her study, one cadre member stated: "I hope we never entirely lose that sense of floundering. It means we are being creative. It's a sign that we're alive!" Some uncertainty is necessary for teachers to tackle new problems and to grow professionally. It is important that teachers recognize that their strengths lie among themselves rather than in depending on the university, administrators, or inspirational speakers for direction and guidance. To recognize the source of one's strengths, some uncertainty must be present. Again, as one cadre member in the Selke study suggested: "We kept waiting for the university to tell us what to do. . . . I can see now that no one could tell us. We had to figure it out for ourselves. It was the best thing that happened in our first year!" Some uncertainty is useful in relationship development.

Assimilation

Not all teacher interns who are thrust into a new school environment feel comfortable in their new surroundings. Some of these aspiring teachers take longer to *assimilate* into the organizational culture. "Organizational assimilation refers to the process by which organizational members become a part of, or are absorbed into, the culture of an organization" (Jablin, 1982, p. 256). Similar to organizational socialization (Van Maanen, 1975), newcomers in the organization learn the norms, values, and actions that allow participation in the organization. Newcomers learn to become part of the social fabric of the organization by taking or adapting roles (Katz & Kahn, 1966) and through "role making" (Graen, 1976) and "role transition" (O'Hair, 1994). It is through role expectations that a newcomer can assimilate into a role that is appropriate for the culture and situation (Jablin & Krone, 1994; McIntyre & O'Hair, 1996). One of the most essential processes for ensuring competent role making in the field-based experience is effective communication.

Based on work from business organizations (Jablin & Krone, 1994), a teacher intern can draw upon three sources of information for assimilating into the organization: (a) official sources of the school such as handbooks, pamphlets, and newsletters; (b) cooperating teachers and university supervisors; and (c) teacher and administrator colleagues. Of these three sources of information, the second and third sources are probably most influential in facilitating assimilation into the school district, school, and classroom. Due to the high level of interaction with their cooperating teacher and others, the teacher intern learns the importance of professional relationships and begins to emulate modeled behaviors. Most research in this area suggests that new recruits (teacher interns) make sense of their work environments as a result of the social interaction (communication) with their supervisors and others.

Four important outcomes can be realized when a newcomer (teacher intern) effectively assimilates into the organization (Jablin, 1994).

1. Newcomers develop shared perceptions of the communication climate.
2. Newcomers will become members of the communication network (both task and social).
3. Newcomers develop cultural knowledge that allows greater opportunity for shared meaning with other organizational members.
4. Newcomers refine their communication competencies.

Both cooperating teachers and university supervisors have the responsibility for assimilating teacher interns into the organizational culture of host schools. As pointed out in the Jarchow et al. chapter, this is particularly important for teacher interns facing international field-based experiences. Coupled with uncertainty reduction techniques, assimilation principles become critical to the success of teacher interns attempting to weave themselves into the cultural fabric of their host culture. In addition, as the Selke chapter notes, shared perceptions of communication climate and communication networking were critical components of successful partnership development. Greater efforts at interorganizational communication (university-school cadres) could facilitate assimilation in important ways.

Feedback

The Wilkins-Canter chapter illustrates the importance of interpersonal feedback to teacher intern effectiveness. Although it is often assumed that cooperating teachers and university supervisors are quick to provide timely, relevant, and constructive feedback, Wilkins-Canter points out that teacher interns become frustrated when they feel they are lacking in direction—as, we concur, do most teachers and administrators when a shared vision or purpose is lacking. In other words, we become frustrated when we cannot see the big picture or how we connect with it.

The relationship between cooperating teacher and teacher intern involves much more than direction and training: It involves shared meanings and education. If one's ability to extract meanings and make connection through communication is lacking, Dewey (1966) states, "there may be training, but there is *no* education" (p. 29). The teacher intern-cooperating teacher relationship is based on effective communication and is but one of many relationships in organizational school life in which feedback is a critical component to a teacher's personal and professional development.

Extensive reviews in the area of feedback from supervisor to employee have resulted in a number of conclusions (Cusella, 1987; Jablin & Krone, 1994; O'Hair, 1994), all of which have important implications for the cooperating teacher-teacher intern relationship. Based on these reviews, we advance the following propositions specific to this relationship:

- *Feedback from credible cooperating teachers is perceived by teacher interns as more accurate and, therefore, can significantly influence perceptions of satis-*

faction and motivation. In Selke's study, this credibility was enhanced by cadre members' on-site knowledge of school cultures and direct connections to the university. Increased satisfaction and motivation for preservice teachers were reported.

- *Feedback involves sharing ideas, not giving advice.* In Wilkins-Canter's study, cooperating teachers provided ideas and specific suggestions (e.g., "This is what I've tried . . .") rather than advice to the teacher intern.
- *Feedback should enhance self-study and be consistent, distinctive, and specific.* Jarchow et al. describe the importance of personal journals as a forum for critical self-study and reflection. Wilkins-Canter extends the importance of specific and relevant feedback.
- *Feedback should be interactive rather than top down: All professionals must receive and give feedback to grow personally and professionally.* In Selke's network of professional development centers, she describes the element of reciprocity as central to the model. Jarchow et al. highlight the importance of interactive feedback as international student teachers recognize their own development as teachers and become more aware of cultural influences on instruction.

Giving effective feedback and meeting the specific needs of teacher interns cannot be understated, as suggested in Wilkins-Canter's chapter, but equally, if not more, important is the modeling of the interactive nature of feedback. We believe it falls short to suggest that cooperating teachers and university supervisors only provide feedback for teacher interns; they must do more. Professional educators must model the importance of receiving feedback from colleagues in their own lives and demonstrate for teacher interns how to seek and receive feedback effectively. In successful schools, teachers are rarely satisfied with their teaching, unlike teachers in less successful schools, who are often satisfied with their performance (Brookover, Beady, Flood, Schweiter, & Wisenbaker, 1979). Successful teachers are constantly seeking feedback to improve teaching and learning.

Conclusion

Senge (1990) instructs us that the Greek word *metanoia* means "a fundamental shift of mind." We need such a mind shift about the importance of effective communication in successful field experiences. Often, communication is taken for granted in field experiences until something goes wrong. We then are quick to place blame on communication or lack thereof. Successful communication in field experience settings requires continuous attention, study, adaptation, and readjustment. As the chapter authors have indicated, culture, networks, and feedback are critical to the study of communication in field experiences. Emphasis on effective communication provides teacher interns with tools for reducing isolation and stress, increasing trust and teamwork, and, in general, enhancing the overall quality of the field experience.

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DIVISION IV

Field Experiences and Curriculum

CURRICULUM: OVERVIEW AND FRAMEWORK

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The Problem

It is difficult to examine the contribution of fieldwork in teacher preparation curriculum without first attending to the question: What is the curriculum of teacher preparation? The answer to that question is neither simple nor straightforward, for it is tied to the questions: When and how do teachers learn to teach? Lortie's (1975) study showed us that learning to be a teacher begins long before one decides to make a career of teaching. The fact that people spend hours in schools long before entering a teacher preparation program shapes their understanding of what counts as instruction and what is perceived to be quality in teaching. Ginsburg and Clift (1990) noted that much of the literature on teacher preparation curriculum documents conflicting and often contradictory messages sent to prospective teachers. They argued that general education courses, specialized content area courses, and university- and field-based courses in pedagogy convey a hidden curriculum that often leads to confusion over what it means to be a teacher at any given point in time.

Griffin (1994), who limited his definition of curriculum to content and process specifically designed to prepare teachers, suggested that it is helpful to view curricula as educational interventions. He goes on to argue that curriculum developers should give considerable attention to making such interventions deliberate, thoughtful, and powerful, as opposed to the weak treatment that has historically composed teacher education efforts. Reynolds (1995) adds that any university-based teacher education program is inevitably limited and, at best, can have only a modest influence on prospective teachers. Of course, this also raises the question: What influence is desirable?

Borrowman (1987) reminded us that the content and purpose of teacher preparation has long been debated among those who emphasize the importance of higher education in providing a broad-based general education and those who emphasize the development of specialized knowledge, as teachers are prepared to employ technical and professional expertise in classrooms. Such arguments continue today as teacher education organizations argue for a knowledge base for teacher education (AACTE, 1989), a rigorous and lengthy preparation program (Holmes Group, 1986), and teacher education standards (ATE, 1991).

Our views of curriculum have been shaped by Eisner (1994), Schubert (1986), and Walker (1990) in that we cannot separate definitions of curriculum from discussions of what is valuable, trivial, or potentially dangerous. That is, no curriculum can be separated from the values of those who write or those who implement any given curriculum. Neither can it be separated from the goals and values of the students who experience the curriculum. Eisner reminds us that there are always differences between what the developers intended when selecting content and instructional procedures and what actually happens in a given classroom. He uses the label *intended curriculum* in reference to the material or activities planned in advance that are designed to achieve some educational goal. The label *operational curriculum* he uses in reference to what actually occurs in any given classroom. Walker reminds us that, regardless of whether or not we refer to intended or operational curricula, differences among individuals lead to a continual negotiation of the curriculum. Such negotiation is readily apparent in early field experiences and in student teaching.

Levels of Ambiguity in Classwork and Fieldwork

When prospective teachers are in more traditional university classrooms, they work within well-established patterns of professor-student interaction. If the class is a large lecture, they take notes quietly, ask few questions, decide what the professor is emphasizing, and study for the test accordingly. If there is a related discussion section, they use that time to gain a better understanding of what will be tested. If the class is discussion oriented, some students will attempt to shape the discourse; others sit back and wait for the discourse to take definable shape before participating; still others never participate. Adept students, both active and inactive participants, look for cues in the environment that tell them what is valued by the instructor, what is important, and what will be tested (or assessed). It is more difficult to identify cues in a discussion-oriented as opposed to a lecture environment, but far from impossible.

In laboratory sessions, intended to train skills such as wait time, higher order questioning, or attaining closure, the expectations for behavior are usually even clearer than in traditional university classrooms. A successful, training-oriented model of instruction depends on clear expectations, multiple opportunities for practice, and clear feedback. Indeed, comparisons of skill acquisition between field settings and laboratory settings suggest that the laboratory settings are far superior to the most friendly of field settings (Metcalf, 1991). But this finding may not hold when prospective teachers are encouraged to rethink and reorganize their previously held views on teaching and learning. Studies of conceptual change in prospective science teachers' views of learning science (Stofflett, 1992) and of prospective math teachers' views of the nature of mathematics (Ball, 1989) indicate that reconstructing prior knowledge is far more complex and resistant to intervention than is skill acquisition.

As research on teachers' learning has focused more and more on subject matter knowledge and the reconstruction of prior knowledge into more scientifically accurate knowledge, we have become more aware of just how complex this intervention Griffin (1994) calls teacher preparation curriculum has become. At the same time, another line of research (Clift, Meng, & Eggerding, 1994) reminds us that the field setting, or workplace, has a tremendous impact on how the intended curriculum of teacher preparation becomes the operational curriculum as prospective teachers become more and more immersed in field settings.

Working in field settings requires that teachers learn cues that are quite different than the ones that proved to be successful while they were students. Instead of focusing on what one person, the instructor, may be saying, doing, or meaning, one now needs to broaden that focus to many persons. As one student teacher with whom we work put it: "I wasn't prepared for the fact that there are students in those classrooms." In addition to attending to the cues provided by the children or adolescents, prospective teachers must also attend to those provided by the authority figures, the people who control the grade or letter of recommendation. Both cooperating teachers and university supervisors are powerful figures in determining a student teacher's future.

Sometimes, the teacher preparation curriculum is in harmony with the field expectations. Other times, it is not. The more change oriented the teacher preparation program, the less likely the harmony with field settings. This places student teachers in an awkward position. Instead of being able to figure out what the professor wants, and then supplying it, the student may be caught between what the supervisor expects and what the cooperating teacher expects. Put differently, one of the unintended outcomes of teacher preparation may be discomfort with, alienation from, and rejection of the intended curriculum as opposed to learning, embracing, and applying new skills, values, and concepts.

This is an area in which research is only beginning. Until recently, programs of research in teacher education have been conducted in relative isolation from one another. Psychologists seldom referenced curriculum theorists; content area specialists seldom referenced sociologists. No one referenced classroom teachers; classroom teachers seldom published in academic journals. The complexity and ambiguity of teacher preparation are increasingly becoming areas of investigation across the disciplines and across institutions. The dynamic interactions among curricula, field experiences, role relationships, and intellectual biographies are acknowledged, as the operational aspects of teacher preparation curriculum are becoming better understood.

Methods, Field Experiences, and the Operational Curriculum: Two Research Reports

In the following research reports, we see two different conceptions of fieldwork in elementary teacher preparation curriculum. In the first, Floden, McDiarmid, and Jennings propose bringing the field to campus in the form of mathematics methods courses emphasizing subject matter knowledge and pedagogical understandings. Instructors in three institutions discuss their intended curriculum and the authors reflect on the potential impact of those curricula in terms of the National Council of Teachers of Mathematics' curriculum standards. Their chapter reminds us that we cannot understand prospective teachers' learning without also understanding their opportunities to learn. These opportunities vary according to teacher preparation institution and according to the specific methods instructor.

In the second report, Nichols, Tippins, and Crockett address the operational curriculum of fieldwork as a learning environment for prospective and practicing teachers in the teaching and learning of elementary science. Their chapter reminds us that student teaching is often a political enterprise as well as one that is educational. Furthermore, they remind us that the children who populate elementary classrooms also have ideas about classroom routines and about what counts as meaningful or as uninteresting work. Perceptions of one's own success in student teaching are dependent on successfully negotiating among all interested parties—including the children.

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11 Learning About Mathematics in Elementary Methods Courses

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ABSTRACT

Given the increasing recognition that teachers' subject matter knowledge is critical—both understanding the subject and understanding it in pedagogically useful ways—program components that bridge field and campus gain increased importance. Such components, such as methods courses, are the natural location for bringing the subject matter expertise of college faculty together with the pedagogical understandings of expert teachers. Reforms advocated for elementary school mathematics call for knowledge few beginning teachers possess—knowledge about content, inquiry, and the pedagogical use of mathematical knowledge. An initial examination indicates that methods instructors could take responsibility for this content but might prefer to concentrate on attitudes toward mathematics and on specific teaching methods. If teacher educators are willing to accept responsibility for such support, beginning teachers are left to their own devices in locating and soliciting the help that they need.

Although most teacher educators and their students think of "field experiences" as taking place outside the college classroom, some college courses bring the field to campus, concentrating on learning the activities of teaching rather than only learning about teaching. Program components that bridge field and campus gain increased importance because of the growing recognition that teachers' subject matter knowledge is critical—in terms of both understanding the subject and understanding it in pedagogically useful ways. Such components, such as methods courses, are the natural location for bringing the subject matter expertise of college faculty together with the pedagogical understandings of expert teachers.

Methods instructors have inherited major—perhaps primary—responsibility for ensuring that elementary school teachers have the knowledge they need about mathematics. Elementary teacher candidates seldom take more than one or two college courses in mathematics, after high school studies that may have included *no* mathematics courses in the final year or two. Mathematics is unlikely to be a major focus of other professional courses, most of which deal with other subjects or with general processes of teaching and learning. Whether by choice or by default, the burden for developing elementary teachers' mathematical understanding falls on methods instructors.

Proposals to require subject matter majors for elementary teachers are unlikely to shift this responsibility. Because elementary teachers seldom see mathematics as their favorite subject and often lack confidence in their mathematical abilities, they are unlikely to major in mathematics. Whether they major in English or elementary education, however, elementary teachers will continue to teach mathematics. Methods instructors will continue to be charged with providing the subject-specific knowledge they need.

The importance of this charge is increasingly salient. A variety of analyses (e.g., Buchmann, 1984; Grossman, 1989; Holmes Group, 1986; McDiarmid, Ball, & Anderson, 1989; Shulman, 1986, 1987; Wilson & Wineberg, 1988) have stressed the centrality of subject matter knowledge in teaching. Trends to increase emphasis on teaching for understanding (e.g., Porter, 1989; Prawat, 1992) make teachers' subject matter knowledge even more essential.

Thus, as practitioners, scholars, and policymakers consider changes in teacher education programs and requirements, the role of methods courses deserves careful, informed discussion. Decisions about change should be based both on a vision of what preparation might be like and on an understanding of the accomplishments and limitations of what preparation is now. To push that discussion along, we compare two prominent goal statements with examples of current practice. The National Council of Teachers of Mathematics (NCTM) has developed standards for mathematics teaching (NCTM, 1989) that address what elementary teachers should know. In foundational work for the National Board of Professional Teaching Standards, Shulman (1986) has provided a more encompassing description of what teachers need to know about the subjects they will teach. We use these statements as lenses for considering current elementary mathematics methods instruction at three universities.

What Should Elementary Teachers Know About Mathematics?

In their *Professional Standards for Teaching Mathematics* (NCTM, 1989), the National Council of Teachers of Mathematics offers a varied and broad definition of the kinds of mathematical knowledge and understanding teachers need as well as recommendations for how professional development programs can assist teachers in acquiring such knowledge. The standards set forth by the NCTM hold teachers accountable for a range of knowledge including knowledge of mathematical concepts and procedures; knowledge of mathematics as "a network of interconnected processes, concepts, and procedures with applications in other disciplines and in society" (NCTM, 1989, p. 133); the capacity to demonstrate mathematical reasoning; and knowledge of "various aspects of problem solving, including formulating and posing problems, applying a variety of strategies to solve problems, solving problems by various means, verifying and interpreting results, and generalizing solutions" (p. 134).

These expectations for teachers' mathematical knowledge go well beyond conventional notions about what teachers need to know in order to teach. According to these standards, teachers need to have not only a thorough grounding in mathematical propositions and procedures—what most people have in mind when they think about mathematical knowledge—but also a perspective on mathematics as a field, including an appreciation of the processes and standards of reasoning used in mathematical inquiry. These processes and standards guide interpretation and evaluation of the propositions, ideas, theories, and procedures that constitute the substance of the discipline. They enable one to judge, for instance, how much evidence exists for an idea and whether that evidence is sound. Mathematics is not a "cut-and-dried" subject consisting of procedures, formulas, and rules that must be memorized, but is a product of reasoning, amenable to collective sense making. Teachers with this perspective would likely try to foster classroom discourse: "Emphasizing reasoning and justification implies that students should be encouraged and expected to question one another's ideas and to explain and support their own ideas in the face of others' challenges" (NCTM, 1989, p. 14).

Shulman and his colleagues (Grossman, 1989; Shulman, 1986, 1987; Wilson, Shulman, & Richert, 1987) have also pointed out that subject matter knowledge—even broadly defined—is an insufficient basis for teaching. Teachers must understand not only the content they would teach but also ways of presenting and representing the content that will promote pupil learning. Shulman coined the phrase *pedagogical content knowledge* to refer to such knowledge, of which the most prominent part is the ability to create and evaluate analogies, metaphors, and examples of subject matter concepts.

Program designers must consider where teachers will acquire this additional substantive knowledge, understanding of mathematics as a field of inquiry, and pedagogical content knowledge. Which aspects of mathematical understanding should be the province of methods courses? Where and how might other aspects be learned? Discussion of these questions can be informed by considering what methods instructors currently attempt to accomplish and what they assume about the processes by which teachers learn about subject matter and how it can be effectively taught.

A Small Sample of Methods Courses

As part of its Teacher Education and Learning to Teach study, researchers at the National Center for Research on Teacher Education interviewed methods instructors at a sample of college-based preservice programs. Programs were selected to provide a diverse array of institutional purposes and contexts.

The methods instructors considered in this chapter work at three universities. *Stockton* taught all the sections of elementary math methods at a large public research university. *Leona* was one of the math methods instructors at a public university with an open-enrollment policy; she thought her course section similar to that taught by others at her institution. Because the teacher preparation program at *Myra*'s selective private university was too small to support methods courses for every subject, she taught a general methods course for elementary school.

Each instructor was interviewed using a semistructured protocol organized around the syllabus for the methods course (Floden, McDiarmid, & Wiemers, 1989). In the main body of the interview, the interviewer asked the teacher educator to imagine that he or she was providing information for a colleague enlisted to take over the course for a year. The interviewer showed the teacher educator an outline of the topics to be covered in discussing the syllabus, then proceeded through each part, with probes intended to press for comments about what the students would learn; what reasons the teacher educator had for choosing the particular content; readings or assignments; and what criteria the teacher educator uses to judge success in the course.

Transcripts from these interviews were read to determine what the methods instructors believed about their responsibility for helping teachers develop their knowledge of mathematics and their ability to draw on that knowledge in teaching. Instructors' ideas about teacher learning provided insight into other opportunities teachers might have to learn the needed subject matter knowledge.

Knowledge About Mathematics

Using the NCTM standards as a guide, we analyzed the interview data along two dimensions: knowledge of the substance of mathematics and perceptions of mathematics as a field.

Knowledge of the Substance of Mathematics

The NCTM argues that teachers must learn mathematics beyond what they bring from high school: "Teachers need experiences that enable them to revisit the content that they will teach in order to revise and develop deeper understandings of the underlying principles and connection among ideas inherent in school mathematics" (NCTM, 1989, p. 74). Data on students in preservice programs collected as part of the Teacher Education and Learning to Teach study appear to bear this out: Fewer than 2 out of 10 prospective teachers could correctly represent a simple proportions problem *at the end of their program* (McDiarmid, 1989). To illustrate 1¼ divided by ½, only 3 out of 10 preservice teachers chose an appropriate representation, indicating a lack of understanding of division (Ball, 1989).

What role do the methods instructors think they should play in teaching students the substance of mathematics? Two of the instructors, Stockton and Myra, take their students' knowledge of the substance of mathematics as a given. Commenting on his students' knowledge of mathematical content, Stockton said, "I think they know it pretty well." He attributes his students' knowledge of mathematics to the state-mandated system of achievement testing they undergo in school. Because Stockton believes that the content of the school mathematics curriculum is unstable, subject to fads and fashion, he thinks that course time should be spent on learning general principles for mathematics teaching rather than mastering specific content.

Myra's view of the adequacy of her students' knowledge of mathematical content is similar to Stockton's:

> They need to learn processes, not so much content stuff. . . . I've got students who are bright enough and have varied experiences. . . . Most of them have come from very good schools so they've had a lot of experiences. They've been the best students in their class. I don't have to fill in that stuff.

For Myra, students' past school success—and, implicitly, their acceptance into the selective college at which Myra teaches—is a sufficient warrant for her belief that they know the substance of mathematics.

Leona, on the other hand, makes different assumptions about her students' substantive mathematical knowledge. She reviews propositions and procedures "to make sure that they understand different concepts":

> I might say, "Give me an example of the associative property of addition," you know. And that could be someone telling me, or someone coming up to the board, or my asking, you know, does everyone understand?

Determining how much of Leona's course is devoted to teaching students mathematical content is not possible without observing every class. Based on this interview, she appears to use a "fill-in-the-holes" approach, teaching content only when it is necessary to learning the method.

These instructors' treatments of mathematical content differ, in part, because of differences among the institutions in which they teach. Whereas Myra and Stockton are faculty at selective colleges, the college at which Leona teaches has open enrollment. Presumably, the knowledge her students bring to her methods class is less predictable than what Myra and Stockton can expect.

In one sense, all three of these instructors assume that responsibility for teaching mathematical content lies outside their purview. Leona only teaches mathematical ideas and procedures when deficiencies in students' knowledge interfere with getting her students to feel "comfortable" with teaching mathematics. She no more considers helping prospective teachers develop their knowledge of mathematical content part of her job than do Myra and Stockton. These three mathematics methods instructors provide prospective teachers little opportunity to "revisit the content that they will teach."

Perceptions of Mathematics

In addition to knowing the substance of school mathematics, the NCTM stresses teachers' sense of mathematics as a field. Teachers should know how mathematical ideas are discovered, developed, tested, judged, and revised. How does someone go about proving a conjecture? Teachers should see mathematics as an activity that involves understanding and discussion of ideas rather than mere memorization of facts and algorithms.

> Learning experiences should emphasize the conceptual foundations of mathematics and actively engage learners in making sense of mathematical situations. . . . Instruction should be organized around searching for solutions to problems and should include continuing opportunities to talk about mathematics. (NCTM, 1989, pp. 66-67)

The NCTM standards call for teachers to portray mathematics as a subject in which pupils are capable of figuring things out for themselves, in which, individually and in groups, pupils can make sense of problems, can communicate their understandings, and can disagree with one another and with "outside authorities."

The methods instructors do see student perceptions of mathematics as important, but they stress *attitudes* toward mathematics rather than *understanding* what it means to do mathematics. Among our methods instructors, Leona seems most intent on changing her students' perception of mathematics. She worries that prospective teachers are uncomfortable with mathematics, that they think it is harder than it really is, and that the resulting negative attitude about mathematics will be communicated to their pupils:

> I think that people, when dealing with mathematics, have a tendency to panic, and have decided the concepts are just too difficult for them to understand and far too difficult for them to explain to someone else. . . . I want them to feel comfortable with that, so when they walk into their classroom, there's no fear when they open and see fractions.

When Leona evaluates class projects, she makes no reference to whether the projects give an accurate picture of mathematics as a field of inquiry. Her emphasis is on factors that will keep students engaged, not on whether the engagement is mathematical. Describing a good learning center (developed as a class assignment), she says that "it met all the requirements: It was manipulative; it was bright; it made you want to go over and see what was inside; it had a lot of different activities that could be changed to different grade levels."

Like Leona, Stockton includes addressing students' attitudes in his responsibilities:

> On the first day of class . . . I say, "How many of you, when you were in elementary school or high school . . . would have put math in the top three of all the subjects you studied?" . . . I get about three or four hands up you know. "How many of you would have put math in the bottom three . . .?" I get more than half the class that will put math in the bottom three. . . . I'll constantly work on attitude, self-concept and development of self-concept. . . . If I can change their attitude towards mathematics and they like doing mathematics, then they are going to like doing it with kids.

When asked about her standards for judging the five lessons that she requires students in her course to prepare, Myra similarly does not mention subject matter. She seems intent on helping her students reformulate their general understandings of what it means to teach and to learn. We could find no evidence in her interview, syllabus, or assignments that she addresses the nature of mathematical knowledge.

Myra's circumstances are different than those of Stockton and Leona. She teaches a *generic* methods course rather than a *mathematics* methods course. (Students in her program attend workshops put on by local teachers. Some of these workshops cover specific methods for teaching mathematics topics.) Although this may in part explain her neglect of students' grasp of the nature of mathematics, there is not evidence in her interview that her emphasis on learning processes would change if she devoted the course to mathematics.

Stockton is the only one of the three instructors who alludes to the conceptual underpinnings of mathematics and their importance. He recognizes that his students have been taught merely to remember, not to understand, mathematics:

> [Mathematics] wasn't taught to them by understanding. It was taught to them by rote. And they learned it by rote. So, I try to break that cycle by saying, "Don't go back out there and teach the kids by rote. When they say 'Why?' you say, 'Because I told you so.' Or 'Because this is the way you get the right answer.' You want to give them the whys. You want to know the whys."

In describing the course topics, assignments, grading criteria, and his own teaching, Stockton does not reveal, however, how his course will enable or dispose teachers to engage their pupils in activities and discussions that will help them understand the conceptual frames, much less the structures of mathematics. For instance, in describing the class designated as "Problem Solving" on his syllabus, Stockton said:

> Here is kind of an outline of my lecture that I give and I will expand and talk about problem solving—the process. I defined it and then I give them the skills and I expound upon each one of these kinds of things.

Collective problem solving—advocated by the NCTM as a way of teaching mathematical inquiry—is evident neither in the interview nor on the syllabus or assignments.

None of these instructors, then, defines his or her responsibility to include helping students develop an understanding of mathematical inquiry. Although Stockton knows that mathematics is not just a given set of rules, his course does not include discussions of topics or problems that would involve students in thinking about how to produce or judge mathematical conjectures.

These instructors assume limited responsibility for helping prospective teachers learn the subject matter knowledge sketched in the NCTM standards. Instead, they assume that students already have sufficient knowledge of the subject matter. Their responsibility is to teach ways of presenting mathematics and to help students develop positive and confident attitudes—either toward mathematics and mathematics teaching or toward teaching and learning in general. They believe, however, that they can accomplish this without addressing students' conception of mathematics as a field of inquiry.

Drawing on Mathematical Knowledge in Teaching

The NCTM standards stress teachers' knowledge of mathematics per se. To promote learning, however, teachers must have more than mere content knowledge. They must also be able to draw on this knowledge in providing explanations, making curriculum decisions, and responding to students. As Shulman (1986) points out, good teachers must go beyond being good students of a subject; they must also have the pedagogical content knowledge that will aid in helping others learn particular content.

Teachers must draw on their subject matter knowledge to devise pedagogically effective teaching strategies, such as the use of analogies, examples, or teaching tasks that represent the content accurately *and* help pupils come to understand the content. Students only get practice in this use of subject matter knowledge if they have had experience teaching (e.g., as a peer tutor).

If teachers are to learn how to use their subject matter knowledge to select or design teaching tasks, methods courses seem a likely place for such learning to take place. Subject-specific methods courses, in particular, seem created to help teachers come up with ways of teaching specific content. What responsibility do these methods instructors take for helping their students learn to make good pedagogical use of their subject matter knowledge?

The methods instructors in this study are all concerned with helping their students learn ways of teaching mathematics topics. Leona said, for example, that her course was "intended to give teachers . . . methods and techniques for presenting mathematics concepts to young children." They want students to learn how to devise and evaluate methods for teaching the mathematics topics; they vary in the priority they give to helping teachers to master existing methods for teaching central topics. None of them, however, gives attention to helping teachers learn to draw on their knowledge of mathematics in designing or evaluating teaching activities.

Given the range of topics in the elementary school curriculum, methods instructors cannot teach teachers individual methods for every possible topic. Instructors might deal with this situation by teaching methods for each of the "major" topics, or they might put more emphasis on helping teachers learn general principles for devising or selecting methods.

Stockton argues that it would be unwise to concentrate on learning methods specific to current curriculum topics. Not only is there insufficient time for all the topics, the topics covered in schools are likely to change.

> I let my students know that in a three hour course in 16 weeks there are going to be many concepts that we will not cover. . . . [They] are going to be teaching things out there 10 years from now that we aren't even thinking about teaching now.

For Stockton, then, methods for teaching specific topics are illustrations of methods appropriate for teaching mathematics. Teachers may use them in their teaching, but they must realize that they will have to find or construct methods for teaching other topics.

Leona puts more emphasis on learning methods for individual topics. The methods textbook she uses (and likes) is organized around major topics, giving several methods for teaching each topic. One of her main course activities is having the teachers each build a "math file" containing ideas for teaching each topic. The methods course is organized around these topics, with each session devoted to methods for different elementary school math content. Leona's "main concern was to create activities on different concepts," referring to currently used textbooks as a source of concepts. Although Leona also emphasizes some general teaching methods (e.g., lesson planning), her hope clearly is to give teachers some options to choose from for each of the topics they must teach.

Whether or not the methods instructors hope to provide methods for the full range of major topics, they all stress teachers' ability to add to their repertoires for each topic they teach. Leona emphasizes collecting methods; Myra and Stockton stress creating them.

None of these instructors ever discusses how he or she would help students judge whether a given teaching method is true to the subject matter. The emphasis in evaluation is on student engagement, not content accuracy. This absence of subject matter criteria for judging methods might flow from an assumption that subject matter evaluation will come naturally to the students, or it might follow from a judgment that subject matter accuracy poses few problems in teaching elementary school mathematics.

How Do Teachers Learn the Subject Matter They Need?

These methods instructors only take responsibility for a fraction of the subject matter knowledge that prominent authorities consider important. In reflecting on this situation, it may be helpful to consider how these instructors think about learning to teach. Examining methods courses in a broader context may suggest where else teachers might be expected to gain the needed mathematical knowledge.

The methods instructors assume that teachers already possess the needed substantive knowledge. Because mathematics is learned primarily in school, these instructors must rely on formal study—in elementary school, secondary school, and a few college courses—to supply the knowledge needed. With this assumption, responsibility for strengthening this knowledge would fall outside the professional program, probably with college mathematics instructors. If teacher educators wish to follow these recommendations, cooperation with other college departments is indicated.

Shulman (1987) writes about acquiring pedagogical content knowledge through the "wisdom of practice," which comes through teaching itself or learning about teaching through secondary accounts (e.g., case studies). These methods instructors also see experience as the primary way students gain pedagogical content knowledge. Myra is perhaps the more strident advocate of learning by experience: "They will have some idea of some materials, especially again from the person who does the workshops on mathematics, but they're not going to learn it until they start doing it." Leona echoes Myra's idea when she explains why she has students present their learning centers and math files to each other in class: "I think that learning to teach . . . is learning by doing and hopefully that's what we're doing in class. We're learning by doing." Stockton requires students in his course to plan and teach at least one lesson out in the field, as a way of getting students to try out some of the ideas they are discussing in class. In all of these cases, actual teaching, either with peers or with younger students, is viewed as a way for students to hone or refine their pedagogical content skills.

These instructors also use modeling to help students' general approaches to teaching. Stockton believes that he should "teach things to the teachers, very much like what you want them to do." Myra writes that much of what she does in her class is modeling the kind of actions and behaviors she sees as necessary for teachers: "What I'm really trying to do is to model for them a way of dealing with people as we talk about dealing with people." These modeling experiences are intended to pass on the "wisdom of practice." They are consistent with the instructors' goals in their emphasis on general learning processes rather than on subject matter appropriateness.

Because the methods instructors give little attention to judging activities in terms of the subject matter, their interviews give no indication of how or where teachers might learn to make such judgments. Teachers learn a variety of methods, mostly through experience. Are all the activities in the bag of tricks supposed to be equal, or are some more useful than others? Many researchers have discussed the pitfalls of experiential learning (Feiman-Nemser & Buchmann, 1985; Grossman, 1989), most generally that students see only the visible product and not the decision making or reasoning that goes into developing the product. It is difficult to tell from these interviews if and how these methods instructors deal with these problems.

Could Methods Courses Be Otherwise?

These methods instructors take similar positions on the aspects of subject matter knowledge for which the math methods course should be responsible. Responsibility for substantive mathematical knowledge is limited to the minor remediation needed to allow teachers to feel comfortable with the methods taught in the course. The methods course has responsibility for developing a positive view of mathematics but not for appreciating mathematics as a field of inquiry. The primary responsibility of the methods course is to help teachers acquire methods for teaching some of the topics in the current school curriculum and to learn how to develop similar methods for other topics. The criteria promoted for choosing these topics are based in student engagement, not in the mathematical content itself. Although these are subject matter methods instructors, they emphasize learning and affect, not content.

What does this small sample suggest about methods instruction in teacher education more generally? Is there reason to think that other math methods instructors would take on different responsibilities for subject matter? These instructors probably represent their own institutions, because two of the three instructors provide all the elementary math methods instruction in their programs. The sample of institutions was chosen to represent a diversity of programs, so the uniformity is suggestive: If a sample chosen to build in variation has none, then wide variation in the population as a whole seems unlikely. Nevertheless, the sample is small and is drawn only from universities. Perhaps a different picture would emerge from careful study of small liberal arts colleges. This initial study suggests, at least, that some existing patterns of practice share the goal of helping teachers learn to teach a specific subject, but construe what is needed to do so quite differently than the NCTM or the advocates of pedagogical content knowledge.

The uniformity may represent adaptation to prevalent features of teaching and teacher education. Teacher educators have relatively little time to prepare their students. Elementary candidates do not see themselves as strong in mathematics. Teaching contexts press for approaches to mathematics teaching that emphasize rote memorization rather than mathematical discourse.

For all this, these data do not demonstrate that math methods courses can *only* take these responsibilities. In a recent symposium presentation, Ball (1988) describes a math methods course that takes responsibility for helping prospective elementary teachers understand the substance of some of the mathematics they will teach. Ball's approach is based on a view of teacher learning that uses the power of experience but goes beyond using experience as a way to "try things out" as teachers, using it also to help teachers live through a different type of learning. Experiences as both teachers and learners combine to challenge teachers' assumptions about the subject matter and about pedagogy.

For Ball, what counts as "knowing" mathematics is having pupils construct mathematical knowledge in the classroom. They conjecture about mathematical ideas, challenge each other's hypotheses, and seek proof from each other for ideas presented. Teachers are collaborators in learning, posing tasks for their students and encouraging them to work together to find solutions and support justifications (Ball, 1989, p. 8). By observing and working in such a class, Ball's methods students are exposed to different images of what elementary school mathematics looks like and what role the teachers and students play. Their assumptions about what they might "do" as teachers are challenged.

Ball's students also gain different experiences as learners of mathematics. Ball gives her methods class challenging problems that use school content that typical students can work with but do not understand. By experiencing, as learners, a "different" type of mathematical knowledge, Ball's students gain a deeper understanding of how their own students might learn this knowledge and how they, as teachers, might foster that learning.

The reforms advocated for teaching elementary school mathematics call for knowledge few teacher education graduates currently possess—knowledge of mathematical content, of mathematical inquiry, and of how to use mathematical knowledge in developing or selecting teaching methods. In discussing possible responses to these reforms, teacher educators should pay careful attention to current practice, especially to responsibilities assumed by different program components. Math methods could, for example, take on these additional instructional responsibilities. This initial sample of methods courses, however, indicates that methods courses may be more concerned with attitudes toward mathematics and with providing a variety of potentially valuable instructional methods. It will be challenging to help elementary teachers understand mathematical content, to help them see mathematics as a topic for discussion and debate, and to help them learn to evaluate how well teaching methods represent the subject matter. Beginning teachers are unlikely to get this help from simple teaching experience.

Where should responsibility for providing this assistance lie? Beginning teachers might gain assistance in a methods course, but methods instructors may have other priorities. Mathematics professors could make a contribution but may have little interest in preparing elementary school teachers. Is anyone ready to take on these changes? Or are the reform proposals themselves unrealistic or misguided? Stronger subject matter preparation has obvious advantages but may not be easy to obtain.

If no group of teacher educators is willing to accept responsibility for such support, beginning teachers are left to their own devices in locating and soliciting the help they need. If they are lucky, they may have colleagues who have developed the ability to represent mathematics for student understanding, or who at least know where to get help. Recent interest in teacher networks suggests promise in collegial support, especially when it is based in long-term relationships. If such help is unavailable, perhaps beginners should begin to ask more of higher education. If professors do not currently see the need to assume responsibility, voices from the field may be needed to catalyze change in the role that colleges and universities play in professional development.

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12 Educational Environments for the Teaching and Learning of Elementary Science: Questions of Fit

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ABSTRACT

The student teaching field experience is often viewed as the capstone event in a teacher education program. It provides an opportunity for both prospective and practicing teachers to come together and construct understandings of classroom events and processes that give meaning to their lives. The way in which both prospective and practicing teachers view the classroom learning environment is an important aspect of knowledge construction associated with the student teaching field experience. This interpretive study builds upon a constructivist perspective of the learning environment to investigate the extent of epistemological fit between the perceived and the preferred learning environments of two elementary student teachers and their respective supervising teachers. The study explores the nature of tensions that arise from discrepancies in perceived and preferred learning environments and key "referents" that influence the way in which prospective and practicing teachers view perceived and preferred learning environments.

Teacher educators across the nation have responded to calls for reform that highlight the need for teachers to be better prepared to bring about the changes needed in schools that will support meaningful learning for students. One of the recurrent themes influencing restructuring efforts of teacher education programs is the need for teachers to value their role as lifelong learners. Strategies such as reflection (Grimmett & Erickson, 1988), action research (Carr & Kemmis, 1986; Kincheloe, 1991), and imagery or metaphor (Johnston, 1992; Tobin, Tippins, & Gallard, 1994) have been introduced to prospective and practicing classroom teachers as a means of facilitating their learning. Institutional restructuring efforts emphasizing the development of university-school partnerships have supported the notion that teacher learning needs to be viewed as a professional activity that begins in teacher preparation and continues throughout one's teaching career.

In our work with prospective and practicing teachers, we have found that creating environments in which prospective and practicing teachers and university educators can learn among and from each other can be problematic. The student teaching or internship experience, in particular, can be laden with discrepancies and tensions that arise from differences in how participants perceive and prefer classroom learning environments. Although internships or student teaching field experiences are often viewed as the capstone event in a teacher education program, they may have several meanings to participants. For some, field experiences are viewed as an opportunity to continue learning; for others, they are viewed as another stepping stone that has to be crossed for the degree. No matter what view prospective teachers have, the field experience is considered by them as an important component of their preparation programs. Professed changes in beliefs and images about the teaching and learning of science need to be supported and nurtured during the field experience. Yet practicing elementary teachers often have difficulty in assisting prospective teachers with constructing and implementing meaningful learning experiences and a different vision of teaching and learning in science.

Purpose

The purpose of this study, in the context of the teaching and learning of elementary science, was to construct understandings of perceived and preferred learning environments for prospective teachers and their respective practicing (supervising) teachers. In particular, the study investigated the extent to which there was an epistemological fit between the perceived and preferred learning environments of prospective and practicing teachers. Two questions that emerged as important with respect to the study include the following: (a) What is the nature of tensions that arise from discrepancies in perceived and preferred learning environments? (b) What are the key "referents" that influence the way in which prospective and practicing teachers view perceived and preferred learning environments? The study uses interpretive research methods to explore the actions of two prospective science teachers in elementary classrooms and the nature of the concomitant learning environments.

A Context for Research on Educational Learning Environments

For more than 15 years, science education research on learning environments has been dominated by the work of Barry Fraser (e.g., 1989) and his colleagues. Their program of research has been collaborative, spanning many countries of the world and involving numerous researchers. Throughout this program of research, Fraser initiated change, initially redeveloping instruments produced by others for use by educational researchers and practitioners. Then he commenced a wave of instrument development in which aspects of the psychosocial learning environment were probed. These instruments used survey methods, usually responses to questionnaires, to obtain teacher and student perceptions of the psychosocial learning environment. The approach was quantitative and largely built on a worldview that was consistent with logical positivism or objectivism, in which learning was seen as being causally related to a number of variables associated with the learning environment.

Typically, a learning environment questionnaire consisted of 20 to 40 items, each of which was to be responded to on a Likert rating scale, usually providing a respondent's perception of the extent to which a particular event occurred in a classroom. The items on the scale were selected to measure dimensions that were included as foci because of their theoretical or empirical salience to classroom life. The items were regarded as a sample of all those belonging to the domain represented by the theoretical dimension. Accordingly, the responses to the items on the questionnaire were assumed to be representative of the responses that would be obtained if respondents addressed all items belonging to that domain. Parallel items were created to provide measures of actual and preferred perceptions of the learning environment. Thus, respondents could indicate what they believed the classroom learning environment was actually like and how they would prefer it to be. The items on the questionnaire asked each respondent about the class environment, and the class average was assumed to be a best estimate of what the learning environment actually was like.

More recently, new instruments have been developed from an entirely different perspective built on constructivism (von Glasersfeld, 1993). Constructivism suggests that individuals construct their own environments in the process of learning. Accordingly, forms of instruments have been developed that enable respondents to acknowledge the learning environment as they experience it as individuals, rather than as a class, in a manner sensitive to the needs of particular research hypotheses and goals. These instruments have also evolved in response to research that suggests that different types of students, such as females and members of different ethnic groups, experience very different learning environments. The focus on individual perceptions of the learning environment provides a basis for rich conversations about life in classrooms and a framework for reflecting on actions and contemplating changes. The current study builds upon the constructivist perspective of the learning environment in two ways: (a) by exploring the role of the prospective teacher as a mediator of learning environments and (b) by using critical theory to provide opportunities for participants to reach an understanding of their own constructed learning environments and consider potential changes to these environments.

Theoretical Rationale

The epistemology underlying most of the learning environment research has been objectivism (e.g., Johnson, 1987; Putnam, 1988). An explicit assumption of most questionnaires has been that an actual environment exists "out there" and that the class mean is the best measure of it. From an objectivist perspective, the actions of the teacher are thought to affect the learning environment directly through such factors as teacher's explanations, questions, managerial strategies, and the way in which furniture or classroom artifacts are arranged.

From a constructivist perspective, the learning environment does not exist outside of individuals; it is a construction of individuals in a given social setting, shaped by what is known by the individuals, their socially mediated beliefs about opportunities for learning, and the extent to which the social and physical milieu constrains learning. Although learning environments are necessarily personal, each individual's constructions are mediated by the action of others in the social setting and characteristics of the culture in which learning is situated. What actually happens over a period of time constrains the construction of what an environment is like for learning. Thus, actions and interactions of those who participate in an educational setting shape individual construction of the learning environment. Constructivism, when used as a referent for thinking about the learning environment, suggests that teachers can only affect learning environments in indirect ways. The nature of the learning environment depends on what happens in a given period of time, who is present when it happens, the physical characteristics of the setting, the expectations participants bring to the learning setting, and the beliefs individuals hold about their roles and the roles of others. In our research, a constructivist epistemology provides a useful way of thinking about learning environment research as it leads to the identification of different questions and challenges to be addressed.

Nature of the Study: An Interpretive Approach to Research on Learning Environments

An interpretive methodology (i.e., Gallagher, 1991) that incorporated a constructivist perspective was used in our effort to understand the nature of the science learning environment for two prospective elementary teachers. An interpretive approach to research was desirable, as it provided the flexibility needed to pursue those aspects of the learning environment that emerged as most salient and to focus the study around them. Using interpretive methods, the researchers generated assertions and focused data framing to support or refute the assertions. The goals of the researcher in the interpretive paradigm are associated with learning and collaborating with participants to understand what is happening and why it is happening in relation to the goals of the participants. In so doing, the researcher brings the perspective of an outsider to the task of making sense from the perspective of insiders. The patterns of the outsider, which saturate descriptions and interpretations of experience, are revealed to the insiders during interactive dialogues that should characterize participant observation studies.

Participants

Both prospective teachers were interns participating in field experiences at two professional practice school sites in the southeastern United States. A prospective teacher, practicing teacher, and university science educator at each site constituted a research team, with the goal of identifying relationships between prospective teachers, practicing teachers, students, and other aspects of the learning environment that had previously remained invisible. The two teams networked with each other in a collaborative effort to make sense of science learning environments in the context of professional practice school communities.

Nicky, a prospective teacher interning in a fourth-grade classroom at Pinetree Elementary School, had recently been involved in a co-reform project aimed at the restructuring of a university Earth/Space Science class for prospective teachers. During this project, she developed a strong "voice" for reflecting the concerns and perspectives of prospective teachers. In addition, she developed a close working relationship with Sharon, the university-based science educator. She was eager to be involved in a classroom learning environment study during her intern experience. Nicky's "supervising" teacher, Diana, was part of a small cohort of teachers who had expressed an interest in the changing nature of teaching and implications for teacher learning.

Like Nicky, Shannon was a participant in an alternative teacher education program characterized by the belief that knowledge about teaching and learning should be constructed in the context in which it is expected to be used. This program challenged many of the traditional assumptions concerning the structure and sequence of preservice teacher education. Unlike Nicky, however, Shannon was a student who had returned to the university to pursue a teaching career after raising her family. She was a strong advocate of the notion of co-reform and was eager to participate in conversations about science teaching and learning. Shannon believed that there would be many opportunities to engage in such conversations during her student teaching internship in a second-grade classroom at Lakeside Elementary School. Although Shannon's "supervising" teacher, Beth, was known for her teaching innovations involving the use of whole-language approaches to reading, she did not view science as a priority.

Data Sources

The primary data sources for this study were the *Classroom Environment Survey* (*CES*—teacher form), the *Views About Science (VAS)* questionnaire, interviews with prospective and practicing teachers, journals, narratives, and classroom observations. Thick description is an important component of interpretive research, and for this reason interviews with key participants, their narrative stories, and vignettes based on critical events are an integral part of this methodology.

The *Classroom Environment Survey* was developed for use in the professional practice school context by a group of science education faculty and graduate students. The five dimensions included in the survey represented factors that were identified as salient to science classrooms from our previous studies: involvement, autonomy, relevance, commitment to learning, and inhibitors to learning. Each of these dimensions was considered from a constructivist perspective. Five items were designed to provide a measure of each dimension. The prospective and practicing teachers responded to the 25 items in terms of what they experienced and what they preferred. The five dimensions of the CES can be summarized as follows.

Involvement. This dimension focuses on the teacher's perceptions of students' use of language and learning in the presence of peers. The five items (students talk to one another about science or mathematics ideas, students make suggestions to me about solving problems, students ask questions of one another as a means of learning, students try to understand the points of views of others, students listen carefully to one another's ideas) of the dimension relate to students putting language to their ideas, testing them with peers, and listening to and making sense of the ideas of others. These modes of involvement do not encompass all possible ways of engaging in science classrooms but ascertain the extent to which students have opportunities to link language and learning.

Autonomy. This dimension focuses on the extent to which the teacher perceives that students have the responsibility for making decisions about their own learning.

Relevance. This dimension focuses on the extent to which the teacher perceives the curriculum to be relevant to the needs and interests of students.

Commitment to Learning. This dimension focuses on the teacher's perceptions of the extent to which students engage in tasks with enthusiasm and construct themselves as learners with respect to the teacher and their peers.

Inhibitors to Learning. This dimension focuses on the teacher's perceptions of the extent to which learning may be inhibited through distractions such as noise or arrangement of furniture.

Data Analysis

In this study, the *Classroom Environment Survey* was used as a heuristic tool for assessing discrepancies between perceived and preferred science learning environments for participants in the study. The learning environment profiles that emerged revealed some important patterns that became the foci of intensive data framing and interpretation. The research teams at each site met to analyze and interpret data and identify tentative assertions that guided subsequent data construction. The use of multiple data sources for each assertion provided greater confidence in the viability of the assertions. Electronic mail was used to facilitate communication across the two school sites. Ultimately, we chose to represent what we had learned as well as emergent themes through the two narrative cases that follow.

A First Case: Replacing the Workplace Metaphor With a Learning Metaphor

Nicky had just completed a "special" course taught during the summer that she felt had been a tremendous disappointment in terms of preparing her to teach Earth/Space Science to children. The science course to "specifically address the learning needs of prospective elementary teachers" did not begin to fulfill this promise for the small group of participants enrolled in the "experimental" course. Nicky, as requested by one of the course instructors, served on the science course development team to act as the "student voice." Nicky found that she was not taken seriously and that the professors, research scientists from the College of Arts and Sciences, generally became defensive when questioned about the appropriateness of their teaching for this particular group of students. Often she left the team meetings feeling angry that her words had been disregarded, but it began to help her reflect on her own beliefs about science teaching and learning. For Nicky, science must always be taught so that students can relate concepts to their own life experiences. Accordingly, science learning activities need to begin with the questions of students—not with imposed learning objectives of an instructor.

Nicky was now beginning her internship teaching experience and had been assigned to a fourth-grade classroom. She was pleased to be working with an age group she preferred to teach, and she was excited that the teacher, Diana Simmons, had said that she looked forward to learning from her. After visiting in the classroom for a few days, Nicky observed that the students eagerly attended to doing their work. Assignments were listed on the chalkboard each morning and the students worked with partners to assist each other toward completing the tasks. Nicky was impressed with the efficient manner in which the children would begin their assignments and help each other along the way as needed. Nicky was particularly interested to learn from Diana's perspectives on teaching as Diana is a full-blooded Apache. One of the first lessons Nicky observed Diana teaching related aspects of Columbus's visit to America and the impact this had upon Native American life. Diana believes it is important for her to encourage students to adopt a critical perspective so they will begin to form their own opinions and not merely conform to the predominant views of their cultural surroundings. Nicky found it refreshing to see the love of a teacher for her students. Diana made it a point to frequently express love for her students throughout the day in many ways—even the computer screen savers ran the message, "Ms. Simmons loves you!" Nicky was glad to be with Diana, particularly as she contrasted what was going on between Diana and her students with the classroom across the hall. Nicky was disturbed at the "old, traditional" teacher who seemed to focus a great deal of energy on reprimanding students and allowed very little student interaction in the classroom.

After a few weeks, as Nicky began to assume more teaching responsibility in the classroom, she was becoming quite disappointed at the lack of time available to talk about teaching with Diana. It seemed that Diana was constantly using planning periods either to meet for an impromptu team meeting or for conversations on the phone. Initially, Nicky was not troubled by this, particularly as this provided her time to work on her own assignments given by her university instructors. Her questions about teaching were getting quite backlogged, however, and it seemed there was no time to share with Diana.

Almost overnight, a change took place in Diana's personal life that created a chasm between herself, her classroom, and the prospective teacher. Nicky soon found that she was quite alone, as Diana was either so distracted that she was unable to concentrate on events in the classroom or was absent from school. Nicky decided that she would make the best of the situation and that Diana's withdrawal gave her a chance to really be in charge of the classroom. She immediately began to put into action some of the teaching strategies she believed would facilitate science learning in the classroom such as cooperative learning groups, learning centers, and use of hands-on activities.

Nicky is a strong proponent for the use of hands-on learning, learning centers, and a great deal of discussion as strategies to support learning that "would stay with" students. Typically, she would involve the students in a large group discussion as a means for finding out what they already knew about a particular topic. This was followed by small group activities that required students to collectively learn about some issue or concept. The groups would then produce some means for reporting back in large group discussion about their learning. This required the students to take time to communicate and coordinate a means for resolving the problems posed to facilitate their learning about some phenomenon. Problems began to emerge for Nicky as these strategies did not seem to fit the usual learning environment of this classroom. The children, who had been working so well together as partners, seemed unable to coordinate their roles to function as cooperative learning groups. When she sent the children off to work at centers, fussing and fighting would immediately ensue as they attempted to share the resources of the centers. Disruptive behavior seemed to be escalating and Nicky was unsure how to cope with the increasing noise levels and off-task behaviors. She was surprised to hear the students complain that they were unable to get their work done because Nicky was not giving board assignments that would allow them to do work at their own individual pace. Dissension became more problematic as the students complained that they just wanted to get their work done so that they could have fun—like they did when Ms. Simmons was teaching.

Tensions: Fits and Misfits in Teachers' Perceptions of the Learning Environment

The fit between Nicky's and Diana's perspectives of the classroom environment initially seemed compatible based on their indicated responses to the five subscales of the learning environment survey. In terms of autonomy, for example, both teachers strongly preferred that students have opportunities to work on their own and that they have ample opportunity to talk with each other in this process. Although Diana indicated that she was pleased that students seemed to value one another as a resource and thus communicated with one another, Nicky became concerned about the quality of talk taking place during learning. Nicky noted that prior to her teaching, students talked with each other only as they individually needed help to accomplish their own tasks. She was frustrated as she perceived that students were unable to engage in the type of discussion required of group problem-solving activities. Nicky commented:

> They didn't work well with cooperative groups. We had kind of been told they would, that they'd done it before. But we found out they hadn't during the Water Cycle. . . . They didn't know how

> to share tasks. It was either you did it all or you did nothing. They didn't know how to take group ownership or how to discuss something between two people.

The students did not like having to negotiate in learning together; rather, they preferred to work as individuals. In other words, Diana emphasized the need for students to be able to *work* on their own. Nicky was more concerned about the kind of learning students were involved in as they worked independently of the teacher.

The problems associated with autonomy coincide with the teachers' perspectives on student commitment to learning. As Nicky reflected on the individualistic focus of student dialogue, she began to question how students and teachers perceived the purposes for accomplishing the tasks put forth in the name of learning. She believed that student commitment to participate in learning activities was not supported by a focus on learning but was driven by a reward system that provided for fun time once work was completed. Nicky expressed her beliefs in the following way:

> They're trying their best to finish. I mean they're trying their best, it's just toward the wrong goal. . . . We asked a student one time, "What do you want to do today?" And he said, "Get all my work done so I can play." So there's a big emphasis on finishing—on getting everything done. . . . They were looking to get done, but also like, "I'll get finished when I want." Finishing was something they had a real good control of. But when we said, "Alright you have 10 minutes to finish and then we're moving on," they were like—"Well what do you mean? How can you tell us when to be finished?"

Nicky was quite discontented with the notion of "getting work done to have fun" serving as the basis for their commitment. In her attempts to encourage students to "learn for learning's sake," she planned problem-solving activities to be resolved in cooperative learning groups. She experienced dissension, as students and their teacher did not share her beliefs about learning. Students were angry because their progress toward completing tasks was slowed as they now had to negotiate ideas and activities with peers. Although Diana did not hinder Nicky's attempts to engage students in meaningful learning activities, she did not take time to discuss what she was observing or to offer comments that might have assisted

Nicky to critically reflect on what was taking place in the classroom. Diana maintained external reward systems that conflicted with the goal of meaningful learning that Nicky was trying to promote. At one point, Nicky considered doing away with "Fun Friday" (a day used almost entirely for watching videos brought in by students) and offering instead to provide learning centers she believed would capture their curiosity and facilitate learning as well. Diana, however, did not readily support Nicky's idea and with the resistance she was already experiencing with students as she tried to implement cooperative learning activities, Nicky decided to go along with the usual routine as she felt this would be less stressful to herself and the students.

Relevance was one category in which the teachers' responses closely matched in terms of their preferences expressed on the survey. Nicky and Diana both have a strong belief that learning in school ought to enable students to become scientifically literate and that this is essential to their success in everyday life. It was the hope of both teachers that students would be able to participate in social activities that would ultimately improve their status in life. For example, Nicky appreciated that Diana took a great deal of time to help students learn how to take good notes so that, as Diana explained, "they would be prepared for college." As Nicky taught science lessons about the water cycle and cavern formation, she emphasized the need for students to be able to construct definitions and apply the use of scientific vocabulary. She wanted students to be able to understand terms they would hear while watching weather reports on television. Ironically, it is interesting to note that although both teachers wanted children to develop a critical perspective that would enable them to speak their own opinion, the majority of science time was spent ensuring that students could correctly speak the language of the scientist. In other words, relevance in the minds of the teachers meant helping students to be able to participate in the kinds of social activities they themselves valued. A change did occur for Nicky as she was encouraged to reflect on the role of language in learning. Following a science lesson one day, Nicky noted that although the students correctly labeled their water cycle models using assigned science terms, they could not articulate their conceptual understanding using their own language. This was a turning point in Nicky's teaching as she decided that she needed to find out more about students' prior knowledge and experiences before she would try to teach concepts based on the use of technical terms.

A Second Case: Teacher as "Miracle Grow" Plant Food or Steam Engine?

Shannon was looking forward to next week when she would assume responsibility for teaching science to the energetic group of second graders. Three weeks into her student teaching experience, Shannon had observed that Beth, her supervising teacher, taught very little science. Shannon perceived that Beth did not enjoy teaching science and would prefer to devote her time to whole-language reading and writing activities. From Shannon's perspective, Beth did not appear to recognize the potential such activities held for enhancing science learning. The science Beth did attempt with students consisted of reading stories about science and asking students to color and paste related pictures. From our observations, it appeared that when students raised questions about science, Beth skillfully avoided answering the questions and channeled discussion in different directions.

Shannon's views about the nature of science and the teacher's role in creating favorable science learning environments stand in stark contrast to those of the supervising teacher. Shannon found the metaphor of "teacher as 'miracle grow' plant food" useful in thinking about science teaching and learning:

> I think that a teacher is like plant food. Teachers are defined by what they do. They try to put together the right combination of ingredients so that children can take what they need to thrive. The right kind of formula is one that provides children with minerals that they can actually use. And I say that it is a "miracle grow" plant food because learning science is a miracle—there is something new that surprises you every day!

As Shannon anticipated teaching a science unit on magnets, she wondered if she would be able to put together the right combination of ingredients for engaging students in meaningful science learning. A starting place for Shannon rested with her own understanding of concepts associated with magnetism. In this regard, she adopted the role of learner in her approach to planning and thinking about the science she would teach:

> As a learner I first have to do a lot of exploring within myself. . . . Magnetism I'm still trying to understand. I'm trying to develop

> my own theories about how these little particles in the magnet align themselves to the earth. Science should not be a secret for children. If the teacher doesn't have the desire to explore along with students, then it can become something dirty and frightening.

Gradually Shannon began to put together a "formula" for creating a favorable learning environment for science. Because Shannon believes that "children need a lot of exploring activities to help them construct knowledge that is meaningful," she developed a series of five learning centers that would provide students with hands-on inquiry experiences. She also planned a set of lessons involving the use of cooperative learning activities, as she felt that "students also learn from each other in the process of developing conceptual understandings." Shannon expressed regret at not having enough time for reflection for, as she commented, "I'm too busy trying to figure out what the ingredients are and how to put them together."

Although Beth did not have many suggestions to offer Shannon in terms of science teaching, she continually expressed the desire to learn from Shannon. Learning centers and cooperative learning were both pedagogical strategies with which Beth was familiar but had never used in her own teaching.

As Shannon implemented the science unit on magnets, she continued to reflect on her practice in terms of metaphors. She quickly found that there were some difficulties with the "miracle grow" plant food metaphor she was using to think about science teaching. The "formula" she had put together, consisting of learning centers, cooperative learning strategies, and hands-on inquiry experiences, seemed to work only with some of the students. Although not completely discarding this metaphor, Shannon began to think about teaching in terms of the metaphor of a steam engine:

> As a student teacher I feel like an old steam train. When wood—like new ideas, different perspectives—are thrown into my engine, I slowly build up steam and the wheels start to turn, lurching at first, but then finally turning smoothly. And just about the time I think things are moving along smoothly, an experience throws on the emergency brake and the train comes to a halt. In science this often happens when I am assessing student learning, and realize that I have to stop and find different strategies for helping students develop their understandings of concepts.

Tensions: Fits and Misfits in Teachers' Perceptions of the Learning Environment

Shannon's beliefs about knowledge, teaching, and learning were, for the most part, consistent with the tenets of constructivism. She stated: "I knew theoretically that the teacher cannot open up the child's head and pour in knowledge, but it didn't really hit home until this student teaching experience." Yet, as Shannon attempted to create a science learning environment consistent with her constructivist beliefs, she encountered many of the same difficulties that Nicky had experienced:

> When I use cooperative learning strategies, little squabbles break out and some students say they want to work by themselves. I have five children who want to pull away from the class. They get very agitated when others get involved in their thinking.

At the same time, Shannon was also sensitive to the feelings of her supervising teacher:

> Sometimes I think I am in a big box, being a student teacher. Sometimes I think that all of the things I am putting into my [illegible]nce lessons are upsetting to the teacher. Then I limit myself, and the creativity I would like to use.

The responses of Shannon and Beth with regard to the five subscales of the learning environment survey indicated a lack of fit, particularly in terms of perceptions and preferences associated with autonomy and relevance. In terms of autonomy, Beth indicated that students seldom have opportunities to make decisions or have full responsibility for their own learning, and she preferred this to be the case. At the heart of her response was the belief that "children at a young age are not fully aware of the consequences of decisions they make, and so the teacher is in a better position to make decisions about what and how they should learn." Beth's desire for a teacher-centered curriculum that provided little room for student autonomy was in conflict with Shannon's perceived and preferred beliefs with regard to autonomy. Shannon stated:

> Sometimes I feel really bad about being a teacher because I don't want to control students. All my life I have been controlled by others, and I don't want to do this to others. The choices I have

> made, were choices that were made by other people, either by my teachers or by my parents. They always made the choices for me. In my classroom I want to do everything I can to provide children with choices.

The tension that existed in relation to Shannon and Beth's lack of epistemological fit with regard to autonomy was evident in that Beth found it difficult to maintain her role as a learner throughout the student teaching experience: "I find myself at times being the gatekeeper. Although I would like to get in there and learn with Shannon and the students about magnets, I feel like I should linger in the background, just to make sure things don't go too far." Fortunately, because Beth and Shannon had developed a positive, trusting relationship, Beth was willing to let Shannon implement ideas that corresponded with her constructivist vision of what science teaching and learning should be like. In situations such as this, where there is a lack of epistemological fit, a trusting relationship between prospective and practicing teachers is, perhaps, essential.

In terms of perceived and preferred environments, Beth and Shannon also perceived the learning environment differently in terms of relevancy to the needs and interests of students. Beth perceived that the environment for learning science had a high degree of relevancy to students' needs and interests and preferred it to be that way, but Shannon indicated that she preferred the relevance of the science content to be much higher than she found in her perceptions of the environment. Shannon eagerly looked for ways to link what students were learning in science across the curriculum and took every opportunity to extend science learning into informal science settings. In discussing her unit on magnets, Shannon stated:

> I am looking for ways to help students make connections. I want them to see the application of magnets in their homes, cars, and other places outside of the classroom. I try to provide students with a starting point for making those connections. And I can tell that some of the students are making those connections. Last night one child connected magnets with the way his refrigerator works. He told me that his refrigerator had magnets, and that those magnets helped the door close.

The tension that existed between Beth's and Shannon's understanding of the nature of science influenced the extent to which they viewed the curriculum to be relevant. For Beth, science consisted of widely accepted "truths" that could most easily be learned from textbooks, children's literature books, or the teacher. She endorsed the importance of learning science from books. Beth, who believed that knowledge existed within sources such as a book or the teacher, held beliefs that were consistent with that epistemological stance. Shannon, on the other hand, talked about the uncertainty and tentativeness of science. She did not view science as a discrete body of facts that could be found within a textbook or an individual; rather, she described learning as "a process of making meaningful connections." As Beth's beliefs in this regard were at odds with Shannon's beliefs, this lack of epistemological fit may have contributed to Beth's difficulty in maintaining the role of a learner throughout the student teaching experience.

Discussion

The data suggest to us that the beliefs of classroom teachers in relation to epistemology and the nature of the classroom learning environment do not always fit with those of prospective teachers. In the first case, for example, Diana's use of the workplace metaphor to make sense of the classroom environment was at odds with Nicky's beliefs about the classroom environment as a learning place. In the second case, the classroom teacher (Beth), who preferred a more traditional "knowledge transmission" approach to teaching, constructed beliefs about the perceived and preferred learning environment that were significantly different than the constructivist beliefs held by Shannon. In both cases, the lack of epistemological fit between prospective and practicing teachers led us to question whether teachers such as Diana and Beth should become more responsive to prospective teachers with very different epistemologies or whether prospective teachers such as Nicky and Shannon should be educated to become more like their supervising teachers. The following emergent themes have shed much light on this question.

- These prospective teachers value learning through critical reflection.

They are resourceful in enhancing their own science teaching and learning. One of the notable qualities shared by Nicky and Shannon was that they greatly valued their roles as learners. In terms of making sense of their experiences, they saw learning as a process of constructing knowledge both personally and socially. As individual learners, they were resourceful in seeking out materials and persons that would facilitate their planning of meaningful learning experiences. Although this process was often time consuming, Nicky and Shannon were able to selectively locate resources without overreliance on others to provide direction. On the other hand, they believed that their learning could be enhanced by interacting with other colleagues. They often took advantage of opportunities to meet with others to share ideas and materials and engage in critical reflection.

They are reflective practitioners. Nicky and Shannon demonstrated a desire to learn through critical reflection, which was consistent with their beliefs about becoming professional teachers. Nicky and Shannon both emphasized that they want to continue to be learning teachers. They saw teaching as a process of constructing and reconstructing new knowledge, which requires an ongoing dialogue with self and others. Nicky and Shannon had been introduced to reflective practice in their respective teacher education programs. Yet there was a tension between what the university was advocating as an essential quality of practice in teaching and what they observed of the everyday practices of their classroom supervising teachers. Neither of the prospective teachers found that their supervising teachers readily made time to engage in discussions with them, or even other colleagues, or to reflect on their own teaching practices. On occasion, the teachers would make suggestions or provide encouraging comments to the prospective teachers; however, they did not make a conscientious effort to model or facilitate the prospective teachers' reflection in-and-on practice.

In our position as university-based science educators, we played an important role in providing support for the prospective teachers' reflective practices. We met regularly with the prospective teachers, both in and outside of the classroom, to talk about various issues of concern. We were impressed by the enthusiasm Nicky and Shannon demonstrated toward engaging in reflective conversations with us, and we perceived that they greatly valued this type of interaction. It was not uncommon, for example, that Nicky would have an article in hand to share or that Shannon would want to discuss a particular journal entry she had written. In both cases, the prospective teachers initiated the use of such materials for their own reflection, and they used these to provide a link for us to be involved as colearners in their student teaching experiences. Shannon and Nicky also sought out others in the school community with whom they could additionally discuss their ideas. In some instances, these persons were their peers; in other cases, we introduced them to individuals who had facilitated our own reflective practices. Both Nicky and Shannon were selective in terms of choosing persons with whom they interacted for purposes of reflection; they tended to select individuals who were very thoughtful about their own classroom practices. Both prospective teachers indicated that they felt having opportunities to reflect on their practice was a key factor in their professional development over the semester.

Their capacity to learn through reflection is enhanced by a critical internal voice. Not only did Shannon and Nicky value the practice of reflection-on-action with others, we observed that these prospective teachers were highly reflective-in-action. In our conversations, it was apparent that Nicky and Shannon were experiencing a great deal of self-talk as they were teaching. By *self-talk* we mean that they were involved in deliberative dialogue within themselves that helped them to make decisions as they were teaching. The following quote, for example, illustrates how Shannon used self-talk as she made decisions while teaching second-grade students about magnetism:

> What was causing the magnet to pull the other magnet washers on the wire toward it? Today a child told me what I was hoping that he would get out of it. He had stayed in the room to do some extra work, and he brought the magnet activity over to me. And he was using it in front of me and he said, "Watch this." He would pull the first magnet, and then the rest of them, and he kept doing it. And I said to myself, "Why does he keep doing that? Can I get him to explain what is happening? What if I change the strength of the magnet—will he still explain it in the same way?" So I asked him, "Why does this magnet attract the other magnets?" And he said, "The magnet's strength is going from the first magnet into the second magnet." I knew he had thought about this for a long time and could explain what he was observing. So I thought, "Next I will change the magnet's strength."

Both prospective teachers indicated that this type of metacognitive activity was a part of their learning process and that learning is a continuing function they intend to build on in their own professional teaching careers. Nicky and Shannon are opposed to the notion that teaching could become a routine activity, and anticipate that changes in their teaching will occur as they construct new ideas about practices in the classroom. We were interested in considering why these prospective teachers seemed to readily accept change. We also wondered how they had developed their strong capacity to self-talk themselves through times of uncertainty. In both cases, these prospective teachers could point to times in their lives when they experienced a traumatic event that required them to evaluate their personal position and make decisions that enabled them to deal with the specific situation. Shannon described the impact of such an event:

> I had wanted all my life to be a veterinarian or study some field related to biology. But I was told all my life by my teachers that I just didn't have it. I wanted to take a second quarter of biology in high school, but my teacher again said, "I just don't think you have what it takes to do a second quarter of biology." I was scared to go to college and was very scared about taking any science. I was told that girls can't do science and I really began to believe that. The one thing that happened that changed my beliefs about my ability to do science was the death of my daughter from a respiratory disease that stunted her growth. The fact that I could survive the trauma associated with her death gave me hope to believe that I could go to college and could do science.

Shannon and Nicky have developed an empowered internal voice that they use to critically reflect both within themselves and among colleagues. This in turn has enabled them to decide how they can turn negative events into positive learning situations. It is perhaps through such traumatic events that females become empowered in relation to their ability to think about and do science. As Sandra Harding and other feminist scholars suggest:

> It is "only" necessary to learn how to overcome—to get a critical objective perspective on—the "spontaneous consciousness" enacted by thought that begins in one's dominant social location. I say "only" ironically, because many women have found the process of understanding their lives . . . to be an extremely painful process, even though an energizing one that has given them, they say, "a second birth." (Harding, 1991, p. 287)

- Nicky and Shannon are risk-takers in learning in that they are willing to learn in nontraditional situations, and to take a critical stance to support meaningful science learning for themselves and others.

They volunteered to learn about teaching by participating in alternative teacher education programs. Both prospective teachers were willing to learn through alternative approaches. Shannon enrolled in a newly developed alternative teacher education program at the university. As a high school student, Nicky had enrolled in an alternative learning program after she nearly dropped out of high school because, as she stated, "the teaching was so bad!" Nicky had also enrolled in a new Earth/Space Science course offered to prospective elementary teachers at the university. In both cases, these prospective teachers knew that they were enrolling in alternative programs that might stress nontraditional ways of addressing the learning needs of students. They were willing to risk the possibility that these alternative programs might not adequately address strategies for facilitating meaningful learning. This was indeed the case for Nicky, as she perceived the newly developed science course to be a failure in terms of preparing her to teach Earth/Space Science to young children. Consistent with her role as a learner, however, Nicky turned this into a positive learning experience by reflecting on the pedagogical strategies that were ineffective and using this information to construct and reconstruct her knowledge about teaching. These prospective teachers are self-facilitating in terms of their own learning and can, therefore, risk getting involved in diverse learning situations.

The prospective teachers perceived that their science teaching practices were in contrast to those of their supervising teachers, yet they remained committed to teaching according to their own visions for teaching. Shannon and Nicky both had strong images of how they wanted to teach science. After several weeks of observation, they perceived that their supervising teachers were not teaching much science. Once they assumed teaching responsibilities in the classroom and began to incorporate science lessons and activities, their pedagogical practices and the nature of science they represented in lessons were unlike the science teaching practices of their supervising teachers. Nicky, for example, believed that children need to be involved in inquiry as a basis for science. She, therefore, organized the students to work in cooperative learning groups using hands-on activities to engage them in the kind of thinking she validated as meaningful science learning. Although Diana did not hinder Nicky's efforts to teach science in this way, her passivity did not provide encouragement or facilitate critical reflection for Nicky. Likewise, Shannon believed that opportunities for problem solving created perturbations that facilitate student learning. She acted accordingly by designing a series of problem-centered learning stations where students could investigate concepts associated with magnetism. Although Beth had never considered using science learning centers to create opportunities for problem solving, she did not discourage Shannon in her efforts. Wary of any learning situation in which the teacher was not in "control," she lingered nearby in the role of gatekeeper, "just in case things get out of hand." Even when conditions sometimes became difficult in terms of student cooperation, both Nicky and Shannon continued to press toward teaching according to their beliefs. This is somewhat surprising, as research has shown that when sharp differences in epistemological perspectives between prospective and practicing teachers occur, prospective teachers are more likely to conform to the practices of their supervising teachers (Chie, 1975; Copeland, 1979; Friebus, 1977; Karmos & Jacko, 1977). Nicky and Shannon both commented that having opportunities to reflect on their images of teaching and science not only encouraged them to critically reflect in-and-on their teaching. After deliberating as to whether or not their teaching practices were consistent with their beliefs about teaching and learning, they could either remain committed to carrying out their visions for teaching or consider viable options for change in their teaching practices. Were it not for their strong critical inner voices, the deliberative process may have been circumvented if these prospective teachers had taken on a more apprenticelike role and merely adopted the practices of their supervising teachers.

The prospective teachers' visions for science addressed dimensions of learning that were unprecedented in the supervising teachers' views for teaching and learning science. Nicky's and Shannon's descriptions of the science taught by their supervising teachers could be represented by the conduit metaphor, in which science teaching is considered to be the transmission of factual knowledge. Although each of the prospective and practicing teachers articulated varying positions about the nature of science ranging along a continuum from objectivism to constructivism, the beliefs of prospective teachers more consistently supported a constructivist view of teaching, learning, and the nature of science. Nicky and Shannon believed that their students needed ample opportunity to raise questions based on their prior science learning experiences, that resources both indoors and outdoors should be made accessible as a basis for carrying out science inquiry, and that a great deal of time was needed for students to individually and collectively construct viable solutions to science problems. For the most part, Diana and Beth agreed with their prospective teachers' perspectives in these regards.

A point of divergence between how the supervising teachers and prospective teachers taught science relates to the prospective teachers' sense of responsibility toward attending to the moral dimensions of science learning. In Nicky's case, she observed that Diana used science pedagogy that she deemed appropriate for preparing students for college. The students were being taught science facts and note taking so that they would do well in college courses. Nicky agreed with Diana's underlying concern that all students should have the preparation needed to participate in various social settings of their choosing and not be limited by sociocultural backgrounds that otherwise might reduce their involvement in diverse institutions or activities. Although they valued this goal, both Nicky and Shannon had a much richer perspective in terms of how they related the importance of science to the moral development of people. We identified three referents that seemed to influence how and why Nicky and Shannon engaged students in science learning: relevancy, making holistic connections, and empowerment.

Both prospective teachers have a strong belief that science learning ought to be personally relevant. Nicky tries to begin each lesson by eliciting student conversation about their prior experiences or by asking questions so that she can decide how to facilitate learning about a science concept such that it has a place in students' lives at that point in time. The notion that science thinking should have holistic connections to other areas of thought became a framework for organizing the daily schedule and activity centers such that subject areas were no longer treated as discrete, unrelated time periods of study across each day. Shannon stated,

> I don't like teaching science in separate little boxes such as magnets, electricity, plants and animals. As I teach more and more, I start to realize how all science works together, and I don't think we should leave out one part.

When Shannon planned a series of learning centers to provide students an opportunity to explore concepts associated with magnetism, she conceptualized and developed centers that reflected a historical and philosophical perspective of the nature of science. That is, each center included an activity that represented magnetism as it was perceived over different time periods. We were very surprised at Shannon's ability to plan and implement science activities that were historically situated. When we asked Shannon about these learning centers, she responded:

> Our lives are built upon other people's lives. Our appearance in the great forest of life depends on all who have come before us. History is very important to the understanding of science. It is important for children to know that what they are thinking right now just didn't happen overnight. Everything, whether it is good or bad science, racism, slavery—all had a beginning. A classroom free of biases just doesn't happen overnight either. Whether it is a handicapped scientist in a wheelchair or black, Asian, white, male or female people doing science, they all come from one root. Children need to know this so that they can learn to work harmoniously.

Empowerment served as a referent for why the prospective teachers believed they should actively engage students in science. Nicky and Shannon did not see science as facts that should be imposed on children; rather, they emphasized that having the ability to think scientifically ought to enhance daily personal decision-making skills and one's ability to learn without reliance on others. When Nicky was going to take her students on a field trip to Marianna Caverns, she knew that students would see stalagmite and stalactite formations. She wanted the children to be familiar with how these formations were made so that they could make decisions about how to learn while inside the caverns—taking care to nurture an appreciation of nature's delicate creations. These referents indicated to us that Nicky and Shannon have rich images of the nature of science they would like their students to experience, and that these experiences should contribute to one's quality of daily living.

Conclusions

Prospective teachers such as Nicky and Shannon, we suspect, are in the minority in most teacher education programs. It is clear, however, that in comparison with Diana and Beth's views of what elementary science teaching and learning ought to be like, the quality of Nicky and Shannon's learning environment seems more conducive to the types of learning advocated in reports calling for reform that reflect constructivist perspectives of teaching and learning. Although Diana and Beth both perceived the learning environment to be close to what they would prefer, their perceived and preferred learning environments were significantly different than those of Nicky and Shannon. As university-based science educators, we were faced with the challenges of becoming more responsive to the needs of Nicky and Shannon. We assumed the roles of facilitators with the goal of furthering the prospective teachers' reflective activity. Nevertheless, we were not entirely comfortable with this role for we believe that when learners such as Nicky and Shannon come to understand teaching and learning roles in relation to knowing and learning in fundamentally different ways, the forces favoring maintenance of the status quo for science teaching and learning will be difficult to withstand without the building of shared visions among prospective and practicing teachers and university faculty. Elimination of the bifurcated nature of supervision, with a shift in responsibility for supervision from the university to school-based supervision, can only be supported through a vision of schools as learning communities in which teachers believe that they, themselves, are learners.

Creating communities in which teachers can learn with each other is difficult considering that the traditions of teacher-learning environments have tended to discourage critical reflection, even on one's own practice. What was particularly unique about these two cases was that Nicky and Shannon were not only able to look critically at their own pedagogy, as well as that of others, but were enthusiastic about learning to teach a subject that is widely disregarded in the culture of elementary school teaching. It was disappointing to find that the supervising teachers, for their various reasons, did not actively participate in the reflective conversations to enrich the deliberations that were taking place between the prospective teachers and ourselves. On the other hand, perhaps the prospective teachers used the dialogic space to develop more of their own voices. This study indicates how essential it is that educators work together to create an alternative culture that can support development and commitment to visions for teaching and learning that will transform classrooms into places where students and teachers can appreciate their roles as lifelong learners.

Finally, Nicky and Shannon's cases gave us a glimpse into what might happen when teachers begin to examine their own journey in learning and the historical, sociocultural, and biographical situations that have influenced their educative experiences. As these prospective teachers reflected in-and-on their learning, they became more assertive about their own learning. This affirmed their beliefs that they have a professional responsibility to facilitate learning that can holistically contribute to their students' quality of life. Teachers need a learning environment where they feel encouraged to develop their personal theories and to engage in inquiry to further their own learning as a basis for enhancing the learning of others. Every participant brings into the learning environment his or her own preferences, shaped by his or her prior experiences. Reform is ultimately initiated within each classroom culture. As teachers and researchers collaboratively engage in reforming the science curriculum, the question of epistemological fit should be considered.

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Curriculum: Reflections and Implications

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For elementary teachers, even more than their secondary counterparts, knowledge of subject matter is difficult to define and even more difficult to translate into working practice. If elementary teachers are majors in a particular content area, it is impossible for them to have the equivalent of a major in *all* subject matter areas. Indeed, possessing a subject area major does not guarantee that one will be able to teach groups of children or adolescents. Learning to teach such groups is the shared province of content area methods courses and field-based practica. But even here, there is no guarantee that the teacher preparation curriculum will enable the development of pedagogical content knowledge—particularly for elementary teachers.

Floden, McDiarmid, and Jennings note that in some institutions only generic methods courses are offered, as opposed to content specific courses. Although one advantage of this might be that students and instructors might discuss the integration of subject matter, a disadvantage is that limited curriculum space precludes thoughtful discussions of the nature of mathematics or mathematical inquiry. In addition, such discussions occur in isolation from contact with children. The students in this class have only their prior experience to draw on, plus any classroom observations they might recall. This is a feature shared by all three of the interviews reported by Floden et al.—the methods courses were studied in isolation from any field experience.

In contrast, Nichols, Tippins, and Crockett studied two interventions in which university science instructors worked with prospective elementary teachers throughout their student teaching experience. Their intensive study of the conflicts between two prospective teachers' goals and their cooperating teachers' goals informs us of the difficulties arising from collaboration or cooperation when values and epistemologies are not the same—and when they are.

Two Views of Methods Courses in Relation to Field Experiences

Teacher preparation curricula are owned, ultimately, by the prospective teachers who elect formal study of content, context, and process. These individuals are the ones who will use some of what they learn (consciously and unconsciously) and abandon the rest. Many forces actively seek to influence their knowledge, beliefs, and actions. Although the two preceding chapters describe only a subset of these forces, they provide us with an insight into the limits and possibilities of curriculum as intervention.

Floden, McDiarmid, and Jennings. In this study, Floden et al. discuss the discrepancies between curriculum standards called for by the National Council of Teachers of Mathematics (NCTM, 1989) and the intended curriculum of three elementary methods instructors (two mathematics methods and one general methods) from three universities. The authors compared two prominent goal statements, one from the National Council of Teachers of Mathematics and one from the foundational work for the National Board for Professional Teaching Standards, with the reported practice of methods instructors who have "inherited major—perhaps primary—responsibility for ensuring that elementary school teachers have the knowledge they need about mathematics" (Chapter 11). The study does not address a traditional school-based field experience as a context for learning, instead describing the methods course as the natural location for bringing "the field to campus."

The three instructors were interviewed and asked to imagine that they were providing information for a colleague enlisted to take over the course for a year. Specifically, the researchers were interested in what the students would learn; what reasons the teacher educator had for choosing the particular content, that is, readings or assignments; and what criteria the teacher educator used to judge success in the course. Interview analysis was based on categories generated by the two goal statements mentioned previously: knowledge of the substance of mathematics and perceptions of mathematics as a field.

The NCTM (1989) standards state: "Teachers need experiences that enable them to revisit the content that they will teach in order to revise and develop deeper understandings of the underlying principles and connection among ideas inherent in school mathematics" (p. 74). The instructors, however, reported that developing knowledge of mathematical content was not their primary focus. They stated that course time should be spent on learning the general principles underlying mathematics instruction. As Myra, the instructor from a private university, said: "They need to learn processes, not so much content stuff." The second NCTM goal used as a guide for analysis was the perception of mathematics. Specifically, the authors state that

> the standards call for teachers to portray mathematics as a subject in which pupils are capable of figuring things out for themselves, in which, individually and in groups, pupils can make sense of problems, can communicate their understandings, and can disagree with one another and with "outside authorities."

Floden et al. report that, although the three methods instructors did see student perceptions of mathematics and problem solving as important, they stressed attitudes toward mathematics rather than the understanding of what it means to do mathematics. One instructor, however, did recognize that his students had been taught by rote and that he tries to "break that cycle."

The authors complete the report with a description of a math methods course (Ball, 1988) that takes responsibility for helping prospective elementary teachers understand the substance of the mathematics being taught. By having students conjecture on mathematical ideas and challenge and seek proof from each other, the methods students are exposed to different images of mathematics and the role the teacher and students might play. They suggest that more mathematics methods curricula should be developed along the lines Ball has developed.

The researchers in this study clearly demonstrate an orientation to curriculum in which national content-oriented organizations such as the NCTM set the curriculum standards for prospective teachers. As the instructor interviews portray, however, the instructors do not agree. The instructors have developed their own views of the value and purpose of mathematics methods curricula and are reasonably satisfied. Floden et al. demonstrate the way in which external standards for instruction are mediated by the teacher educators involved in direct contact with students and by the delivery structure.

For us, several questions are raised about the ownership of curriculum, courses, and change. What are the relevant processes and contexts that might enable those who would embed curriculum standards in both the intended and the operational curriculum to negotiate with and, ultimately, influence teacher educators who do not yet embrace the standards. We wonder about the social, political, and financial factors in our institutions that might encourage ongoing professional development for teacher education faculty. We also wonder if the standards (whether NCTM or others) are perceived to be sufficiently broad as to allow teacher education instructors to bring their own talents and personalities to permit an individual stamp on the curriculum. Finally, given the range of curriculum topics existing in elementary school curricula, can we expect elementary teachers and elementary teacher education programs to be held accountable for the range of pedagogical content knowledge for all national content-oriented organizations?

The nature of organizational relationships and role relationships among teacher educators is also questioned by the authors. There is an assumption that methods courses can "bring the field to campus," but this assumption does not address the influential role played by practicing teachers. The absence of a field component raises the issue of replacing experiences found in real classrooms with real students by work on campus. It seems to us that understanding how groups of students learn of mathematics might be addressed more fully if coursework were supplemented by actively working in classrooms with children. But perhaps such work is unnecessary? The role of fieldwork in helping (or hindering) prospective teachers' understanding of students, contexts, content knowledge, pedagogy, and the integration of all four into one's own practice is, still, far from well understood.

One final issue raised by this study is that teacher educators are not only found in colleges of education. Neither are math educators. This study reminds us that we must endeavor to establish working relationships not only with departments within the colleges of education but also with colleges across campus. To achieve standards such as those of the NCTM and others, collaboration and cooperation are essential. The authors, however, are quite perplexed as to how we might overcome the barriers to cross-campus and cross-institutional curriculum planning.

Nichols, Tippins, and Crockett. Nichols et al. present a case study of two elementary student teachers working with their supervising teachers and university-based science educators in the context of two professional practice schools in the southeastern United States. The researchers intended to construct understandings of perceived and preferred learning environments for prospective teachers and their respective practicing teachers. Their data sources included a survey, questionnaire, interviews, journals, narrative, and classroom observation. Constructivism, as the underlying epistemology in this study, represents a point of departure from previous research on learning environments (Fraser, 1989) that relied heavily on objectivist perspectives. Nichols et al. explore the role of the student teacher as a mediator of the environment and demonstrate the process of how the participants reach understandings of their own constructed learning environments as a first step to potential change to these environments. The cases of the student teachers, Nicky and Shannon, and their respective practicing classroom teachers, Diana and Beth, powerfully represent not only the "fits and misfits" of the student teachers' beliefs about children's knowledge and learning of science but also the conflicts and tension arising from epistemological differences between student teacher and practicing teacher.

Nicky, a proponent for the use of hands-on learning, learning centers, and student discussion, experienced disruptive and off-task student behaviors as these strategies were not the norm of the usual learning environment. Maintaining Diana's external reward system represented a further epistemological incongruity for Nicky, who promoted "learning for learning's sake." In an attempt to implement this idea, Nicky considered doing away with "Fun Friday" and offered learning centers as an alternate activity. With no encouragement on Diana's behalf and the current student unrest, however, Nicky decided not to interrupt the routine.

In the second case, Shannon, the student teacher, and her supervising teacher, Beth, experienced similar tension and conflicts in goals. Shannon's beliefs about knowledge, teaching, and learning were consistent with a student-centered, constructivist science curriculum, while Beth, known more for her innovative work in whole-language reading instruction, preferred a more teacher-centered classroom emphasizing science as presented and portrayed in textbooks. Beth, although unable to offer many suggestions to Shannon in terms of science instruction, was willing to learn from Shannon and allowed her to experiment in the implementation of her constructivist vision of science. As the authors note, this type of trusting relationship in the midst of a clear lack of epistemological fit is crucial and needs further exploration.

The Issues. The significance of the operational curriculum and its points of intersection between such aspects as biography, context, and expectations are apparent in this study. Both Nicky and Shannon were participants in an alternative teacher education program that challenged traditional assumptions of preservice education. Nicky had been involved in a co-reform science project prior to student teaching and, according to the authors, had developed a strong voice for issues surrounding prospective teachers. Shannon, a nontraditional student returning to the university after raising her family, was also interested in reform.

Curriculum ownership and decision making were left to the individual teachers to implement. Although this situation has great leadership and growth potential for everyone involved, it may also create additional barriers for prospective teachers and practicing teachers to take advantage of all learning opportunities. In other words, divergence in goals is not necessarily less desirable, nor does it preclude valuable learning. Nicky and Shannon, like countless other student teachers, face the perennial problem of differences in epistemology and preferred learning environments between prospective and practicing teacher. This becomes even more problematic when evaluation on the part of the practicing teacher or university-based supervisor is a point of contention. The authors allude to this power discrepancy, yet we feel that any discussion of field experiences should make mention of this issue.

Who were the teacher educators in this study? Who were the practicing teachers? Who were the student teachers? Who were the university-based science educators/researchers? What were the specific learning environments? We see the potential answers to the questions raised as one of the major strengths of this study. It is the multidirectionality of learning that is intriguing and promising. Tippins et al. present numerous examples of learning in concert with self, others, and the setting or location as phenomena requiring an expanded definition of teacher and learner. Although the authors state the understandable commitment to the prospective teacher, we are left with the question of university responsibility to the field-based teacher educators. How can we structure this relationship in a way that is beneficial to all parties?

Together, these two chapters raise four important issues about both the intended curriculum in teacher preparation and the operational curriculum: (a) curriculum ownership and decision making, (b) methods instruction in relation to fieldwork, (c) role relationships among teacher educators, and (d) the role of research and researchers in teacher preparation curricula.

Curriculum Ownership and Decision Making. The issue of who is responsible for defining the content of preservice teacher preparation is far from settled. Floden et al. suggest that professional organizations are (or should be) prime stakeholders by virtue of their thoughtful and knowledgeable attention to subject matter standards. But the interviews they report document that instructors, who are bounded by the resources available to their respective colleges, are also prime stakeholders. Instructors may or may not agree with the standards; they may or may not feel that it is important to incorporate some or all of the standards.

Nichols et al. remind us that there are at least three other groups who are prime stakeholders. Student teachers actively construct their knowledge of content, delivery possibilities, and relationships among content, delivery, and the children who populate K-12 classrooms. Cooperating teachers have developed their own ideas of content, which are embedded in the classroom routines they have established. Although they may be open to learning from university professors and novice teachers, they are not open to completely rearranging their practices to satisfy the perceived needs of either student teachers or professors. Finally, there are the children themselves. All too often in discussions of teacher education and the contribution of field experiences, we forget that children and adolescents can serve as teacher educators too. Their reaction to the changes suggested by eager novice teachers can have a profound impact on teachers' willingness to allow innovation as well as student teachers' beliefs in their own efficacy. The role of children and adolescents in determining the operational curriculum of teacher education is understudied, underanalyzed, and virtually absent from discussions of teacher preparation curriculum reform.

Methods Instruction in Relation to Fieldwork. Throughout this handbook, the purpose and nature of field experiences are examined. The chapters in this section raise questions about the purpose of methods instruction in relation to fieldwork. The authors of both chapters assume that methods instruction is an intervention designed to change the status quo of current teaching in math and science. Floden et al. view methods as bringing the field to campus; Nichols et al. view methods as a resource affecting knowledge construction. Both chapters remind us that the goals that methods instructors hope to achieve may be in direct conflict with the practice of cooperating teachers.

Both chapters also remind us that curriculum implementation plays out differently in different contexts and that it is mediated by individual processing. In teacher education, therefore, there are two curricula operating simultaneously. In the first level, the university implements a partially deliberate, partially unintended curriculum of general education, content-specific education, and pedagogical education. This curriculum is operationalized in courses, other experiences, and field settings. It is reconstructed (we believe) by prospective teachers through a process of filtering some information and integrating some information. The second level comprises the ways these individual prospective teachers plan, implement, and evaluate curriculum in their fieldwork. They design an intended curriculum—with and without advice from experienced teachers and university professors. They then observe and respond as that curriculum becomes operational. The value of the work reported by Tippins et al. is the knowledge that teacher educators gain when they observe this second level of curriculum. All too often, methods instructors (whether housed in Arts and Sciences or in Education) do not have the opportunity to observe the translation of the first level into the second level.

Role Relationships Among Teacher Educators. In most programs, the categories of "professor," "supervisor," "teacher," "student teacher," and "student" are rigidly defined. Within these categories, there are often subcategories that are also rigidly defined (i.e., mathematics professor, chemistry professor, educational psychologist). Crossing categories is not easy. There are institutional barriers, including distance, time, and work demands. There are differences in professional and social norms, and differences in epistemology, value orientation, and professional goals. Floden et al. refer to these barriers as they despair over mathematics professors' desires to enact NCTM standards or to accept direct responsibility for teacher education. Tippins et al. refer to these barriers as they examine value conflicts and goal conflicts among teachers, student teachers, and professors.

Role conflict and role ambiguity among supervisors, cooperating teachers, and student teachers are well documented. Ways of creating new roles and dealing effectively with cross-role responsibilities are less well understood. Discussions of problems and possibilities, however, are seldom framed in terms of curriculum. As professional practice schools and other forms of cross-institutional opportunities for teacher education are being constructed, it will become more and more important to merge, plan for, and study issues of role with issues of intended and operational curriculum.

The Role of Research. In both chapters, the researchers' voices dominate. This is appropriate because both chapters rely on empirical data to guide their conclusions and both are written by researchers. But if improving the teacher education curriculum is our ultimate goal, research that is only conducted by university-based faculty limits our understanding. Teachers, researchers, and students all strive to make sense of education and educational practice in relation to prior experience and current social, emotional, and political contexts. We are all learners and, as learners, we may choose to critically reflect on experience—or not. There is a wide variance in the frequency and degree to which we use systematic and coherent strategies for data collection and analysis. There is also a wide variance in the empirical evidence, the constructs, and the experiences we draw upon to confirm or to challenge our ideas. We would argue that ongoing, systematic curriculum evaluation is crucial to understanding and improving field experiences and other experiences in teacher education. We would further argue that multiple research perspectives and multiple voices will better enable all of us to understand where we agree and where we disagree.

Knowledge sources may include those who study education but do not necessarily teach. They may also include those who teach and who study their own teaching. Marilyn Cochran-Smith and Susan Lytle (1993) argue that the former is outside knowledge and the latter is inside knowledge. Outside knowledge is often generated by scholars and researchers who

> have asked what it means to know about teaching: what can be known, how it can be known, who has the authority to know, and how knowledge can or should be used for theoretical and practical purposes. . . . The epistemology embodied in these assumptions, however, is exclusionary and disenfranchising. It stipulates that knowing the knowledge base for teaching—what university researchers have discovered—is the privileged way to know about teaching. (p. 42)

Cochran-Smith and Lytle argue that inside knowledge is constructed in ongoing teacher-student interactions: "Essentially, teachers and students negotiate what counts as knowledge in the classroom, who can have knowledge, and how that knowledge can be generated, challenged, and evaluated" (p. 45).

If we accept Griffin's (1994) view of teacher preparation curriculum as an intervention, the preceding chapters provide us with two opportunities to reflect on the difficulty of creating communities that provide support for the intervention. Unlike most agricultural interventions (such as fertilizer, pest control, or climate control) that occur in a controlled environment for a specified period of time, teacher preparation curricula/interventions occur in numerous, often uncontrolled environments for a long period of time. Thus, we would argue that teacher preparation curricula should include numerous, but related, experiences that enable prospective teachers and current teacher educators to develop and challenge their own *working theories of practice*.

For us, teaching is inherently a theoretical enterprise. Based on our reading and our own experience, research, and numerous observations of student teachers of secondary English, we find that prospective and novice teachers enter formal pedagogical training with strong ideas about how one improves writing, interprets literature, evaluates student work, and so on. This often takes a propositional form—that is, "If I carefully correct grammatical errors, students' writing will improve." These theories of practice are sometimes challenged, sometimes reinforced, or sometimes ignored by university professors, field-based teacher educators, peers, and the individuals themselves. We also find that our teacher education colleagues in our building and across our campus also have theories about teaching that take propositional form. For example, "If I allow students to rewrite until they achieve the standard I set, they will become better writers." But seldom do professors, students, practicing teachers, and interested others make these theories visible or examine the results when theories internal or external to a person's belief structure are in opposition.

There are some intriguing possibilities raised by researchers such as Richardson and her colleagues (1994), who have been conducting a research program that allows teachers to inquire into their own practical arguments about reading. Ball (1989) and her colleagues have been encouraging prospective teachers to rethink their theories about math teaching and learning. Some teacher educators (i.e., Clandinin, 1993; Clift, Meng, & Eggerding, 1994; Russell & Munby, 1992; Valli, 1992) have begun to create contexts that encourage teacher educators to reflect on how their own prior constructions and current experiences affect learning. Although these projects are far from mainstream, they do suggest that it is possible to strengthen the teacher preparation curriculum/intervention and that ongoing research can provide useful, if somewhat painful, information as the intervention is interpreted and contextualized.

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